

```

/0000 +-----+
/      | SYSTEM |
/1000 +-----+
/      | ARRAY  |
/      | SPACE  |
/      +-----+
/      | FREE   |
/      +-----+
/      | CODIFIED|
/      | BASIC  |
/      +-----+
/      | SYMBOL |
/      | TABLE |
/      +-----+
/      | LINEBUF|
/      +-----+
/      | STACK  |
/      +-----+
/      | FORLIST|
/      +-----+
/      | GOLIST |
/1756 +-----+
/      | RIM    |
/      | LOADER |
/1777 +-----+

```

```

/4200 +
/4201 -
/4302 *
/4343 /
/4404 ^
/4105 =
/4106 <
/4107 >
/4110 <=

```



```
/4110 =<
/4111 >=
/4111 ==>
/4112 <>
/4213 (UMINUS)
/4114 (DONE)
/4115 .
/4116 ;
/4117 )
/4221 TO
/4222 STEP
/4223 (
/4224 FN
/4025 COS
/4226 TAN
/4227 ATN
/4230 LOG
/4231 EXP
/4232 SUR
/4233 ABS
/4234 SGN
/4235 INT
/4236 RND
/4237 SIN
/4200 (CRLF)
/4200 0
/4201 END
/4222 FOR
/4203 GOSUB
/4224 GOTO
/4204 THEN
/4205 IF
/4206 INPUT
/4207 LET
/4208 NEXT
/4209 PRINT
/4212 RETURN
/4213 STOP
/4214 DIM
/4215 RESTORE
/4217 DEF
/4220 READ
/4221 DATA
/4222 (EXIT)
/4223 (EQF)
```

```
PEXIT=0000
FSVE=0240
FSEQ=0250
FSGE=0102
FSLI=0110
FSGI=0140
FSLE=0150
```


FJMP=1000
FJMPI=1400
FST=2000
FSTI=2400
FLD=3000
FLDI=3400
FAD=4000
FADI=4400
FSB=5000
FSBI=5400
FMD=6000
FMPI=6400
FDV=7000
FOVI=7400
FWD=200
BXWD=600

ADCL=6532
ADLA=6531
AOST=6532
ADRO=6533
ADSK=6534
ADSE=6535
ADLE=6536
ADRS=6537
DILC=6050
DICD=6251
DISD=6052
DILX=6053
DILY=6054
DIXY=6055
DILE=6056
DIRF=6057
CLEN=6134
CLAB=6133
CLOF=6132
CLZE=6130
CLSK=6131
CLCA=6137
CLSA=6135
CLBA=6136

/BASIC.L3E

5007 5610
6210 1000

JMP I .+1
START

6411 7402 INTHLT, HLT
6012 7700 INTPLC, 7700

PAL8

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And start it up!

/BASIC4.52

FIELD 0

/TO HELP BINARY LOADER IN CASE HE BL

DWS IT.

/EASIC.L8E

/INTERUPT ROUTINES.
/UP7 UP AND AWAY.0
JMP I .+1
INTER.

0000	0000	ARLOC, 0
0001	5402	CODELOC, 0
0002	6500	PSYMTAB, 0
0003	0000	NSYMTAB, 0
0004	0000	0215, 215
0005	0000	0212, 212
0006	0000	0250, 260
0007	0000	OV, 0
0008	0000	INDEX1, 0
0009	0000	INDEX2, 0
0010	0000	DISAUTO, 0
0011	0000	AC3, 0
0012	0000	AC2, 0
0013	0000	AC1, 0
0014	0000	OP3, 0
0015	0000	OP2, 0
0016	0000	OP1, 0
0017	0000	ACS, 0
0018	0000	ACE, 0
0019	0000	OPS, 0
0020	0177	0177, 177
0021	0000	OPE, 0
0022	0000	TMP, 0
0023	0000	GETCH, GETCH
0024	0000	PUTCH, PUTCH
0025	0000	01FLAG, 0
0026	0000	FENTER=JMS I ;FPT
0027	0000	PCL, 0
0028	0000	PLINBUF, LINBUF
0029	0000	MLINBUF, LINBUF
0030	0000	MDLIN, MDLIN
0031	0000	PTEMP, 0
0032	0000	DECEXP, 0
0033	0000	PNUMBUF, NUMBUF
0034	0000	LOCCTR, 0
0035	0000	READLOC, 0
0036	0000	PARGERR, ARGERR
0037	0000	ACRD, 0
0038	0000	0240, 240
0039	0000	LIVENO, 0
0040	0000	GOTEMP, 0
0041	0000	0740, 7740
0042	0000	0770, 7770
0043	0000	EPTR, 0
0044	0000	FPTR, 0
0045	0000	GPTR, 0
0046	0000	HPTR, 0
0047	0000	02, 2
0048	0000	FORCT, 0
0049	0000	SUMFLG, 0

/BASIC.LSE

```

0165 0012 012, 12
0166 0000 OPOP, 0
0167 0000 ADDRESS, 0
0170 0077 077, 77
0171 0377 0377, 377
0172 0007 07, 7
0173 0000 OPERAND, 0:0:0
0174 0000
0175 0000
0176 7501 PTEXT, XTEXT
0177 4142 PERROR, ERROR
0178 6441 PSXERR, SXERR
0181 1024 PEVAL, EVAL
0182 1400 PGETADD, GETADDR
0183 0213 PEXECUT, EXECUTE
0184 2354 PPUSH, PUSH
0185 3551 PPOP, POP
0186 4744 PFIX, FIX
0187 1232 PGETOPR, GETOPR
0188 0472 PPASSCH, PASSCH
0189 1015 PGETOPR, GETOPR
0190 0341 PSTOVAR, STOVAR
0191 0311 PGETVAR, GETVAR
0192 3702 PPRINTX, PRINTXT
0193 1674 PGETBLK, GETBLK
0194 2707 PSLTOP, SLOOT
0195 5200 POUTNUM, OUTNUM
0196 2405 PEDIT, EDIT
0197 6430 PSTICKI, STICKIT
0198 3110 PNONBLN, NONBLNK
0199 3747 PPRNUM, PRNUM
0200 2603 PGETLIN, GETLIN
0201 7644 PPLIST, PLIST
0202 2420 PCOLUMN, C
0203 0300 INDEV, 0
0204 0000 OUT02, 0
0205 0000 OUTDEV, 0
0206 0000 ODEV, 0
0207 0000 CNTLO, 0
0208 0000 VOUT, 0
ICAL TIMES.
0135 0000 RSHACH, 0
0136 0000 DISB, 0
0137 7116 PRESET, RESET1
0138 7735 SPECINT, CCINTK
0139 7325 PCOMT, COMT
0140 7146 DELOUT, OUTDEL
0141 0362 CACLR, CLRCMT
0142 6413 SPLFT, RLFT
0143 0000 PIEN, TEN
0144 4500 PAVORM, ANORM
0145 4432 PARI, AKI
0146 4654 PALI, ALI
0147 2014 ONE, 2014
0148 2400 ZERO, 0:0:0
0149 0000

```

/THIS PREVENTS INTERRUPTS DURING CRIT

PAL 8

SUBJECT

```
0154 0187  
0210, 200  
PFPLAG, 0  
POADD, OADO  
O4, 4  
PLINFIX,LINFIX  
0161 2330  
07745, 7745  
PCHKFIT,CHKFIT  
0163 6430  
PGOLIST,GOLIST  
0164 7725  
GSPTR, 0  
GET=1  
ISIT=JMS I.;XISIT;XGISIT  
  
0166 4273  
0167 4266  
MUSTBE=JMS I.;XMUST;XGMUST  
0171 7345  
PLEGIN,LBEGIN  
0172 7563  
MBEGIN,-LBEGIN-1  
0173 2214  
MLEND, -ENDPOL  
0174 0374  
PISITI,ISITIT  
0175 4104
```

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ADDRESS	OPERATION	DATA	STATUS
0177	GETWD,		
0200	TAD I		
0220	LOCCTR		
0221	WORD		
0222	ISZ		
0223	LOCCTR		
0224	ISZ		
0225	JMP I		
0226	GETWD		
0227	PLETDO,		
0228	LETDO,		
0229	MUSTBE		
0230	3673		
0231	JMS I		
0232	PEVAL		
0233	MUSTBE		
0234	2200		
0235	JMS		
0236	STOVAR		
0237	GETWD		
0238	EXECUTE, JMS		
0239	TAD		
0240	PLETDO		
0241	DCAL		
0242	GETVAR		
0243	TAD I		
0244	1450		
0245	SPA		
0246	7510		
0247	JMP		
0248	KEYWD		
0249	IS IT A LINENO		
0250	NO		
0251	NO		
0252	NO		
0253	NO		
0254	NO		
0255	NO		
0256	NO		
0257	NO		
0258	NO		
0259	NO		
0260	NO		
0261	NO		
0262	NO		
0263	NO		
0264	NO		
0265	NO		
0266	NO		
0267	NO		
0268	NO		
0269	NO		
0270	NO		
0271	NO		
0272	NO		
0273	NO		
0274	NO		
0275	NO		
0276	NO		
0277	NO		
0278	NO		
0279	NO		
0280	NO		
0281	NO		
0282	NO		
0283	NO		
0284	NO		
0285	NO		
0286	NO		
0287	NO		
0288	NO		
0289	NO		
0290	NO		
0291	NO		
0292	NO		
0293	NO		
0294	NO		
0295	NO		
0296	NO		
0297	NO		
0298	NO		
0299	NO		

0227 7740
 0232 5313
 0231 7332
 0232 1450
 0233 7424
 0234 5532
 0235 1240
 0236 3237
 0237 7472
 0240 5641
 0241 2213
 0242 2557
 0243 2413
 0244 0515
 0245 0517
 0246 0375
 0247 4107
 0250 0312
 0251 0500
 0252 2173
 0253 0577
 0254 2570
 0255 6472
 0256 3773
 0257 0457
 0262 1576
 0261 1623
 0262 0467
 0263 2402
 0264 2572
 0265 7173
 0266 7165
 0267 7163
 0270 7154
 0271 7172
 0272 6441
 0273 5573
 0274 5674

SMA CLA
 JMP NOTKWD
 CLA CLL CML RTR
 TAD I WORD

KEYAD,

/IS IT A STATEMENT WORD
 /NO

SML I PSXERR
 TAD SJUMP
 DCA .+1

HLT I .+1

SJUMP,

JMP I .+1

EXECUTE

END

FOR

GOSUB

GOTO

IF

INPUT

* LET

NEXT

PRINT

RETURN

STOP

DIN

RESTORE

SKIPIT

DEF

READ

SKIPIT

EXIT

STOP

ATTYIN

ATTYOUT

LPTOUT*

LPTOUT

PTRIN

SXERR

RURD

NORUBO

IFNZRO

MACHINE<

CLEAR

DELAY

USF

PLUT

REALTIME

SETRATE

SETCLOCK

WAITC

WAIT

SXERR

ACCEPT

REJECT>

0275 7633
 0276 7654
 0277 7446
 0302 7410
 0301 7743
 0302 7743
 0303 7743
 0324 7743
 0305 7743
 0306 6441
 0307 7743
 0310 7743

/THIS SLOT IS NOW FREE. (6031)

/UCOM" --- USER COMMAND.

S X E R
S X E R
S X E R
S X E R
S X E R
S X E R
S X E R
S X E R
S X E R

ADDRESS	INSTR	OPERANDS	OPERATION	STATUS	PC	PC+1	PC+2	PC+3	PC+4	PC+5	PC+6	PC+7	PC+8	PC+9	PC+10	PC+11	PC+12	PC+13	PC+14	PC+15	PC+16	PC+17	PC+18	PC+19	PC+20	PC+21	PC+22	PC+23	PC+24	PC+25	PC+26	PC+27	PC+28	PC+29	PC+30	PC+31	PC+32	PC+33	PC+34	PC+35	PC+36	PC+37	PC+38	PC+39	PC+40	PC+41	PC+42	PC+43	PC+44	PC+45	PC+46	PC+47	PC+48	PC+49	PC+50	PC+51	PC+52	PC+53	PC+54	PC+55	PC+56	PC+57	PC+58	PC+59	PC+60	PC+61	PC+62	PC+63	PC+64	PC+65	PC+66	PC+67	PC+68	PC+69	PC+70	PC+71	PC+72	PC+73	PC+74	PC+75	PC+76	PC+77	PC+78	PC+79	PC+80	PC+81	PC+82	PC+83	PC+84	PC+85	PC+86	PC+87	PC+88	PC+89	PC+90	PC+91	PC+92	PC+93	PC+94	PC+95	PC+96	PC+97	PC+98	PC+99	PC+100	PC+101	PC+102	PC+103	PC+104	PC+105	PC+106	PC+107	PC+108	PC+109	PC+110	PC+111	PC+112	PC+113	PC+114	PC+115	PC+116	PC+117	PC+118	PC+119	PC+120	PC+121	PC+122	PC+123	PC+124	PC+125	PC+126	PC+127	PC+128	PC+129	PC+130	PC+131	PC+132	PC+133	PC+134	PC+135	PC+136	PC+137	PC+138	PC+139	PC+140	PC+141	PC+142	PC+143	PC+144	PC+145	PC+146	PC+147	PC+148	PC+149	PC+150	PC+151	PC+152	PC+153	PC+154	PC+155	PC+156	PC+157	PC+158	PC+159	PC+160	PC+161	PC+162	PC+163	PC+164	PC+165	PC+166	PC+167	PC+168	PC+169	PC+170	PC+171	PC+172	PC+173	PC+174	PC+175	PC+176	PC+177	PC+178	PC+179	PC+180	PC+181	PC+182	PC+183	PC+184	PC+185	PC+186	PC+187	PC+188	PC+189	PC+190	PC+191	PC+192	PC+193	PC+194	PC+195	PC+196	PC+197	PC+198	PC+199	PC+200	PC+201	PC+202	PC+203	PC+204	PC+205	PC+206	PC+207	PC+208	PC+209	PC+210	PC+211	PC+212	PC+213	PC+214	PC+215	PC+216	PC+217	PC+218	PC+219	PC+220	PC+221	PC+222	PC+223	PC+224	PC+225	PC+226	PC+227	PC+228	PC+229	PC+230	PC+231	PC+232	PC+233	PC+234	PC+235	PC+236	PC+237	PC+238	PC+239	PC+240	PC+241	PC+242	PC+243	PC+244	PC+245	PC+246	PC+247	PC+248	PC+249	PC+250	PC+251	PC+252	PC+253	PC+254	PC+255	PC+256	PC+257	PC+258	PC+259	PC+260	PC+261	PC+262	PC+263	PC+264	PC+265	PC+266	PC+267	PC+268	PC+269	PC+270	PC+271	PC+272	PC+273	PC+274	PC+275	PC+276	PC+277	PC+278	PC+279	PC+280	PC+281	PC+282	PC+283	PC+284	PC+285	PC+286	PC+287	PC+288	PC+289	PC+290	PC+291	PC+292	PC+293	PC+294	PC+295	PC+296	PC+297	PC+298	PC+299	PC+300	PC+301	PC+302	PC+303	PC+304	PC+305	PC+306	PC+307	PC+308	PC+309	PC+310	PC+311	PC+312	PC+313	PC+314	PC+315	PC+316	PC+317	PC+318	PC+319	PC+320	PC+321	PC+322	PC+323	PC+324	PC+325	PC+326	PC+327	PC+328	PC+329	PC+330	PC+331	PC+332	PC+333	PC+334	PC+335	PC+336	PC+337	PC+338	PC+339	PC+340	PC+341	PC+342	PC+343	PC+344	PC+345	PC+346	PC+347	PC+348	PC+349	PC+350	PC+351	PC+352	PC+353	PC+354	PC+355	PC+356	PC+357	PC+358	PC+359	PC+360	PC+361	PC+362	PC+363	PC+364	PC+365	PC+366	PC+367	PC+368	PC+369	PC+370	PC+371	PC+372	PC+373	PC+374	PC+375	PC+376	PC+377
---------	-------	----------	-----------	--------	----	------	------	------	------	------	------	------	------	------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------

/ROUTINE WHICH CHECKS STATUS OF CONT

0356 1716
0357 0320
0360 0322
ROL C FLAG.

CLRCNT, 0

0361 7231
0362 1134
0363 7550
0364 5767
0365 3134
0366 5762

CLA IAC

TAD

NOINT

/WAS IT SET TO -1?

SNA CLA

JMP I

PBOMB

/VEP. GIVE STOP MESSAGE.

DCA

NOINT

/NOPE. RESET IT.

JMP I

CLRCNT

/AND EXIT

0367 6572
PBOMB, CNTLCR

0370 4377
0371 2417
0372 1755
0373 0211
0374 0720

SPACERR, JMS I

TEXT '100-BIG'

PERRR

0375 4531
0376 4435
0377 2373
0402 0032
0401 4572
0472 1774
0403 1073
0474 7750
0405 5267
0406 4567
0407 0012
0410 5612
0411 5323
0412 0214
0413 4571
0414 7000
0415 4357
0416 5235

IF,

JMS I

PEVAL

FENTER

OPERAND

FST

FEXIT

MUSTBE.

/THEN

TAD

OPERAND

SPA

SNA CLA

JMP

SKIPI

GET

ISIT

/A

LINENO

JMP I

XEXECU

JMP

GOTO+1

XEXECU,

EXECUTE+1

FOR,

/A VARIABLE

JMS

FINDIT

JMP

NOTHERE


```
0417 7201 CLA IAC
0420 1113 TAD INDEX1
0421 3114 DCA INDEX2
0422 7240 CLA CMA
0423 1113 TAD INDEX1
0424 3113 DCA INDEX1
0425 5232 JMP INLUPF
0426 1414 TAD I INDEX2
0427 3413 DCA I INDEX1
0430 1414 TAD I INDEX2
0431 3413 DCA I INDEX1
0432 2153 INLUPF, ISZ GOTEMP
0433 5226 JMP LUPF
0434 2163 ISZ FORCT
0435 1153 NOTHERE, TAD FORCT
0436 1314 TAD 011
0437 7750 SPA SNA CLA
0441 5311 JMP FORERR
0441 1150 TAD WORD
0442 7241 CIA
0443 3413 DCA I INDEX1
0444 1150 TAD WORD
0445 3252 DCA FORVAR
0446 4571 GET+MUSTBE /'=1
0447 3673 3673
0450 4511 JMS I PEVAL
0451 4512 JMS I PGETADDR
0452 2410 FORVAR, 0
0453 2000 0
0454 2020 0
0455 4435 FENTER
0456 2457 FSTI ADDRESS
0457 2457 FEYIT
0458 4572 MUSTBE /'10'
0461 3757 3757
0462 1145 TAD LOCCTR
0463 3413 DCA I INDEX1
0464 7240 CLA CMA
0465 1153 TAD FORCT
0466 3063 DCA FORCT
```

/CAN'T FIT 9 IN FORLIST

```
0467 4571 SKIPIT, JMS I PIGNORE /LOOK FOR "0" OR C.R.
0471 5533 JMP I PEXECUTE /AND EXECUTE THE NEXT STATEMENT.
```

0471 2115 PIGNORE, IGNORE

0472 0432 PASSCR, 0
0473 4571 JMS I PIGNORE
0474 2350 ISZ WORD
0475 4556 ISIT
0476 4100 4100
0477 5273 JMP
0506 5672 JMP I PASSCR
-4
/THIS LOOKS FOR A REAL C.R.
/LOOK FOR "0" OR C.R.
/A REAL C.R. ?
/NOPE. A SLASH.
/AND RETURN TO CALLER.

0571 4477 FOREPR, JMS I PERRR
0522 0517 TEXT 'FOR'
0523 2230
0524 0311 11
0525 4177 G0308, JMS
0526 4332 JMS
0527 1165 TAD
0510 1325 TAD MGSBEND
0511 7650 SNA CLA
0512 5326 JMP
0513 1045 TAD
0514 3555 DCA I
0515 2155 ISZ
0516 5321 JMP
0517 4177 G0TC, JMS
0520 4332 JMS
0521 2353 ISZ
0522 1453 TAD I
0523 3145 DCA
0524 5523 JMP I
0525 0323 MGSBEND, GSBEND
0526 4477 DEEPERR, JMS I PERRR
0527 2717 TEXT 'G0SUB'
0530 2325
0531 0230
0532 0320 G0ROTH, 0
0533 4570 MUSTRE
0534 2341 0000
0535 1350 TAD
0536 3253 DCA
0537 2352 ISZ
0540 4556 ISIT
0541 0300 0000
0542 5353 JMP
0543 4477 JMS I
0544 1411 TEXT 'LINENO'
/A LINENO
WORD
G0TEMP
WORD
/DEFINED
ISITDF
PERRR
TEXT 'LINENO'


```

0545 1615
0546 1617
0547 0335
0550 4571
0551 2312
0552 5732
0553 0330
0554 0200
0555 2332
0556 7744
0557 0220
0558 1063
0559 3053
0560 1356
0561 3013
0562 5372
0563 1413
0564 1052
0565 7052
0566 5375
0567 2413
0568 2253
0569 5355
0570 5757
0571 2357
0572 5757

```

ISITDF, GET+MUSTBE / (CR) OR '0'

JMP I GOROTH

VARIEMP, 0:0:0

PXFORLI, FORLIST-1

FINDIT, " FORCT

DCA GOTEMP

TAD PXFORLIST

DCA INDEX1

JMP INLOOP

FINDLUP, TAD I INDEX1

TAD WORD

SNA CLA

JMP FOUND

ISZ INDEX1

INLOOP, ISZ GOTEMP

JMP I FINDLUP

ISZ FINDIT

JMP I FINDIT

PAGE

```

0600 4571
0601 7000
0602 4572
0603 5273
0604 1050
0605 3237
0606 4571
0607 2000
0608 1045
0609 3271
0610 1413
0611 3445
0612 4501
0613 4435
0614 2333
0615 0330
0616 4566
0617 2332
0618 5225
0619 4435
0620 3151
0621 1237
0622 4570
0623 3756
0624 4501
0625 4570
0626 4570
0627 4501
0628 4570

```

GET+MUSTBE / A VARIABLE

JMS I PFINDIT

JMP NEXTERR

TAD WORD

DCA NEXTVAR

GET+MUSTBE / (CR) OR '0'

2000

TAD LOCCTR

DCA LOCTEMP

TAD I INDEX1

DCA LOCCTR

JMS I PEVAL

FENTER

FST+FWD+FORLIM-

FEVIT

ISIT

2000

JMP TRYSTEP / NO

FENTER

FLD ONE

FJMP+FWD+GOTSTEP-

TRYSTEP, MUSTBE / 'STEP'

3756

JMS I PEVAL

MUSTBE / (CR) OR '0'

/BASIC.LRE

0632	2000	FENTER	
0633	4435	GOTSTEP,FST+FWD+FORSTEP--	
0634	2270	FEXIT	
0635	2000	JMS I	PGETADDR
0636	4502	NEXTVAR,0	
0637	2000	0	
0640	2000	0	
0641	0100	FENTER	
0642	4435	FLDI	ADDRESS
0643	3467	FAD+FWD+FORSTEP--	
0644	4262	FST+BKWD+--VARTEMP	
0645	2672	FST+BKWD+FORLIM--	
0646	5253	FEXIT	
0647	2000	TAD	ACS
0650	1024	TAD	FORSTEP
0651	1324	SVA CLA	
0652	7710	TAD	AC1
0653	1020	SZA CLA	
0654	7540	JMP	FORDONE
0655	5253	FENTER	
0656	4435	FLD+BKWD+--VARTEMP	
0657	3724	FSTI	ADDRESS
0660	2467	FEXIT	
0661	2000	JMP I	PEXECUTE
0662	5523	LOCTEMP	
0663	1271	LOCCTR	
0664	3245	ISZ	GOTEMP
0665	2053	JMP	-2
0666	5265	JMP I	PEXECUTE
0671	2000	LOCIFMP,0	
0672	2557	PFINDIT,FINDIT	
0673	4477	NEXTERR,JMS I	PERRR
0674	1675	TEXT 'NEXT'	
0675	3024	RETURN, GET+MUSTBE	/(CR) OR '0'
0700	2000	TAD	GSBPTR
0701	1165	TAD	MGOLIST
0702	1320	SVA CLA	
0703	7550	JMP	RETNERR
0704	5313	CLA CMA	
0705	7240	TAD	GSBPTR
0706	1165	DCA	GSBPTR
0707	3165	TAD	GSBPTR
0710	1555	DCA	LOCCTR
0711	3245	JMP I	PEXECUTE
0712	5513	RETNERR,JMS I	PERRR
0713	4477	TEXT 'RETURN'	
0714	2235	MGOLIST,-GOLIST	
0715	2425		
0716	2215		
0717	2000		
0720	2253		

/BASIC.L8E

L A B - 8 0 E B A S I C

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WRITTEN BY JACK BURNES

THIS BASIC IS A COMBINATION OF LAB-8/E BASIC

AND BK-BASIC FOR THE POP-8. TO CREATE IT
FOR THE LAB-8/E SET "MACHINE=1", TO CREATE I

THE POP-8 SET "MACHINE=3".

MACHINE=1

THIS CODE OVERLAYS THE BINARY LOADER IN FIELD

ONE TO MAKE LAB-8/E BASIC SELF STARTING.

1PNZRO MACHINE<

FIELD 1

*7700

JMP I

USEIND (6000)

*6000

DCA
TAD
DCA I
TAD
SZA
JMP I
CIF CDF M

6000 3453
6001 1211
6002 3512
6003 1153
6004 7117
6005 5512
6006 6213

Store charlman temporary (should be 0)
set up temp
set up temp
set up temp
was a temp
was a temp
was a temp
was a temp

/BASIC.L8E

```

0721 0000 FORLIM, 0;0;0
0722 0000
0723 0000
0724 0000 FORSTEP, 0;0
0725 0000
0726 0000 SGN,
0727 4435 FENTER
0730 0100 FSGE
0731 3200 FLD+FWD+MNSONE--
0732 0150 FSLE
0733 3151 FLD ONE
0734 0000 FEXIT
0735 5726 JMP I SGN
0736 0014 MNSONE, 0014;0;0
0737 0000
0741 0000 PUTCH, 0
0742 3326 DCA SGN
0743 1326 SGN
0744 0027 TAD SGN
0745 1374 TAD 0177
0746 7640 TAD 07763A
0747 5357 JMP PNOCR
0750 1344 TAD PCCUNT
0751 1126 TAD COLUMN
0752 3237 DCA NEXTVAR
0753 3126 DCA COLUMN
0754 1237 TAD NEXTVAR
0755 0376 AND PUTXRA
0756 7110 CLL RAR
0757 7172 PNOCR, CLL CML CMA RAR
0760 3237 DCA NEXTVAR
0761 1326 TAD SGN
0762 0375 AND 0140A
0763 7440 SZA
0764 1365 TAD 07640A
0765 7640 SZA CLA
0766 2126 ISZ COLUMN
0767 1326 TAD SGN
0770 4777 JMS I JPUTCH
0771 2237 ISZ NEXTVAR
0772 5370 JMP -2
0773 5741 JMP I PUTCH
0774 7763 07763A, 7763
0775 0140 0140A, 140
0776 0000 PUTXRA, 0
0777 7002 JPUTCH, PUTER

```

/IS IT A C.R.
/NOPE.
/ADD IN EXTRA PLACES FOR GOOD LUCK.
/SAVE COLUMN POSITION

/REGET WHERE WE WERE.
/ARE WE INSERTING NULL CHARACTERS?
/NOW DIVIDE BY 2.
/AND NOW INVERT AND DIVIDE BY 2 AGAIN
/SAVE FOR LATER USE. THIS IS NULL CO

/RECALL THE CHARACTER.

/INCREMENT THE COUNTER
/GIVE NULLS UNTIL IT'S SATISFIED.

/NULL AFTER C.R. WORD.

PAGE

/REST FLAGS AND DEVICES.

1000.	START,	JMS I	XRESTA
1001	4603	JMP I	+
1002	5602	SCRATCH	
1003	2442	XRESTA, ISET	
1004	7510		
1005	2410	EVAL,	
1006	4177	JMS	GETWD
1007	1204	TAD	EVAL
1008	4504	JMS I	PPUSH
1009	1353	TAD	04214
1010	1353	JMS I	PPUSH
1011	4534	JMP	GETOPR+
1012	5216	TAD	04213
1013	1354	JMS I	PPUSH
1014	4534	JMS	GETWD
1015	4177	ISIT	
1016	4566	SKP	
1017	3577	JMP	ISUMIN
1018	7410	ISIT	
1019	5215	SKP	
1020	4566	JMP	GETOPR
1021	3577	ISIT	
1022	3577	JMS	
1023	3577	SKP	
1024	7410	JMP	
1025	5215	ISIT	
1026	4566	JMS	
1027	3755	JMP	
1028	5235	ISIT	
1029	4234	JMS	
1030	4570	MUSTRE	
1031	3751	JMP	
1032	5537	JMS I	
1033	4566	NOOPAREN, ISIT	
1034	7302	JMP	
1035	3755	JMS	
1036	3276	DCA	
1037	3277	DCA	
1038	1353	TAD	
1039	3275	DCA	
1040	4567	GET+ISIT	
1041	3755	JMP	
1042	5274	TAD	
1043	1275	JMS I	
1044	4534	JMS I	
1045	4234	JMS	
1046	4566	ISIT	
1047	3753	JMP	
1048	5264	JMS I	
1049	4546	JMS I	
1050	4534	JMS	
1051	4234	JMS	
1052	4566	ISIT	
1053	3753	JMP	
1054	5264	JMS I	
1055	4546	JMS I	
1056	4534	JMS	
1057	4234	JMS	
1058	4566	ISIT	
1059	3277	DCA	



/BASIC.L8E

1062	4536	JMS I	PPOP		
1263	5266	JMP	.+3		
1064	3277	ONEOIM,	TWOSS		
1065	4536	JMS I	PFIX		
1066	3276	DCA	ONES		
1067	4572	MUSTBE			
1070	3761				
1071	4535	JMS I	PPOP		
1072	3275	DCA	WTEMP		
1073	4177	JMS	GETWD		
1074	4502	JMS I	PGETADDR		
1075	0030	GOTSS, 0			
1076	0030	ONES, 0			
1077	0030	TWOSS, 0			
1100	4435	FENTER			
1101	3467	FLDI	ADDRESS		
1102	0000	FEXIT			
1103	5734	JMP I	.+1		
1104	1293	OPDONE			
1105	4575	JMS I	PISITLIT /ISIT A LITERAL		
1106	5310	JMP	ISITFUN /NO		
1107	5527	JMP I	PGOTOPR /IT IS IN THE AC NO4		
1110	1450	ISITFUN, TAD I	WORD		
1111	1362	TAD	03754		
ONS.					
1112	7310	SPA	/IS IT A LEGAL FUNCTION?		
1113	5530	JMP I	/NO, EXIT WITH MESSAGE.		
1114	7450	SNA	/WAS IT 'FN'?		
1115	4177	JMS	/YES, SKIP OVER LETTER		
1116	4534	JMS I			
1117	4571	GET+MUSTBE	/NO		
1120	3755				
1121	4234	JMS	EVAL		
1122	4535	JMS I	PPOP		
1123	1330	TAD	FJUMP		
1124	3325	DCA	.+1		
1125	7402	HLT			
1126	5727	JMP I	.+1		
1127	1230	FNEXIT			
1130	4731	JMS I	FUNTAB		
1131	5453	FN			
1132	5516	FJUMP, FUNTAB,			
1133	5632	COS			
1134	6200	TAN			
1135	6114	ATN			
1136	6410	LOG			
1137	5412	EXP			
1138	6425	SQR			
1141	0720	ABS			
1142	6434	SGN			
1143	5353	INT			
1144	5024	RND			
1145	1761	SIN			
1146	6441	PUTJ			
1147	6441	SXERR			
1150	6441	SXERR			
1152	6441	SXERR			

/POINTER TO PUT CHAR ROUTINE.
/FOR THE MISC. FUNCTIONS.

1151 1770 GETJ /GET A CHAR FROM THE TTY.
IFNZRO MACHINE<
ADC /"NORMAL" A-D CONVERSION RETURN.
TST /"TEST CHARACTER BUFFER".
TIM /TIME (# OF CLOCK TICKS).

>
IFZERO MACHINE<
SXERR
TST
SXERR
TAB /TAB FUNCTION IS IMPLEMENTED.
SXERR /UNIMPLEMENTED USER FUNCTION.

IFNZRO MACHINE<
CLS /GET STATUS OF LAST TICK.
CLC /GET CLOCK COUNT BUFFER.
ADR /GET CONVERSION FROM BUFFER.

>
IFZERO MACHINE<
SXERR
SXERR
SXERR

>
1162 3754 03754, 3754
1163 4314 04314, 4314
1164 4213 04213, 4213

ORLOW=.
ORHIGH=FNEXIT-1

PAGE

1200 457A FNEXIT, MUSTBE /101
1201 3761
1202 4177 GOTOPR, JMS GETWD
1203 4505 OPONE, JMS I PPOP
1204 3456 DCA OLDOP
1205 1450 TAD I WORD
1206 0272 AND 0700
1207 7550 SNA CLA
1210 5220 JMP ITSOP
1211 1450 TAD I WORD
1212 2275 AND 0707
1213 1273 TAD 03755
1214 7100 CLL
1215 1356 TAD 023
1216 7520 SNA CLA
1217 5530 JMP I PSXERR
1220 1066 ITSOP, TAD OLDOP

1221	0272	AND	0700
1222	3271	DCA	OTEMP
1223	1450	TAD	WORD
1224	0272	AND	0700
1225	7041	CIA	
1226	1271	TAD	OTEMP
1227	7740	SMA	CLA
1230	5247	JMP	DOITNOW
1231	1056	TAD	OLDOP
1232	4504	JMS	I
1233	4435	FENTER	
1234	2073	FST	OPERAND
1235	0000	FEXIT	
1236	1273	TAD	OPERAND
1237	4514	JMS	I
1240	1074	TAD	OPERAND+1
1241	4504	JMS	I
1242	1075	TAD	OPERAND+2
1243	4514	JMS	I
1244	1452	TAD	I
1245	4514	JMS	I
1246	5511	JMP	I
1247	1056	DOITNOW, TAD	OLDOP
1250	0072	AND	077
1251	1274	TAD	07764A
1252	7450	SNA	
1253	5363	JMP	UDOPER
1254	7001	IAC	
1255	7650	SNA	CLA
1256	5321	JMP	UMQPER
1257	1066	TAD	OLDOP
1260	2070	AND	077
1261	1276	TAD	OJUMP
1262	3271	DCA	OTEMP
1263	4505	JMS	I
1264	3075	DCA	OPERAND+2
1265	4505	JMS	I
1266	3074	DCA	OPERAND+1
1267	4505	JMS	I
1270	3073	DCA	OPERAND
1271	7402	HLT	
1272	0700	OTEMP, 700	
1273	3755	03755, 3755	
1274	7764	07764A, 7764	
1275	7077	07077, 7077	
1276	5577	JMP	I
1277	1312	PLUS	+1
1300	1316	MINUS	
1301	1327	STAR	
1302	1332	SLASH	
1303	5742	UPARX	
1304	1342	RELATE	
1305	1342	RELATE	
1306	1342	RELATE	
1307	1342	RELATE	

/OR 'UPARROW' IF NO EXTENDED FNS

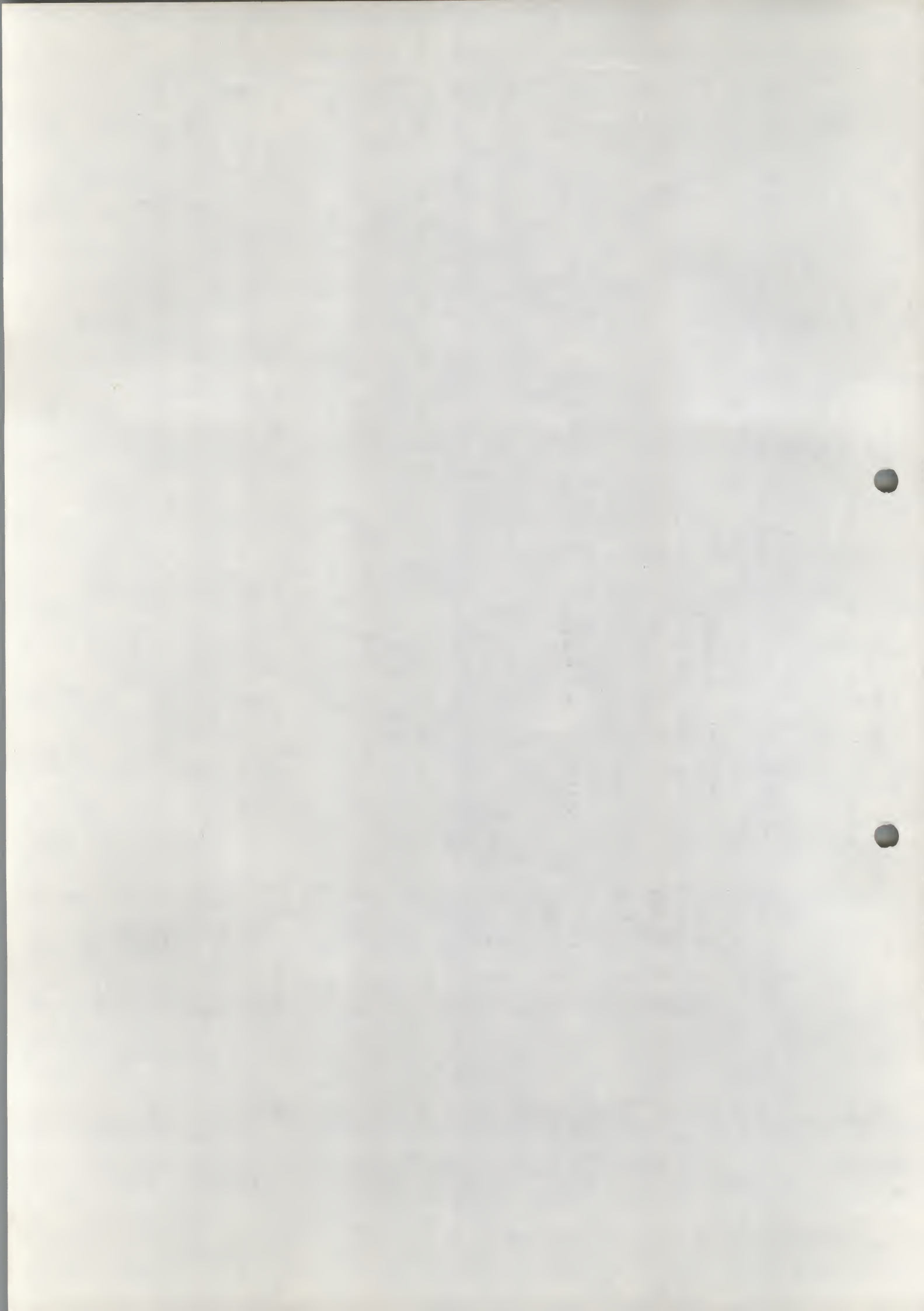
1310	1342	RELATE		
1311	1342	RELATE		
1312	4435	FENTER		
1313	4473	FAD	OPERAND	
1314	0020	FADEXT, FEXIT		
1315	5223	JMP	OPDONE	
1316	4435	FENTER		
1317	5473	FSR	OPERAND	
1320	0000	FEXIT		
1321	1020	TAD	AC1	
1322	7640	SZA CLA		
1323	7330	CLA CLL	CML RAR	
1324	1024	TAD	ACS	
1325	3024	DCA	ACS	/DIRECT REF. TO FLOATING AC
1326	5243	JMP	OPDONE	
1327	4435	FENTER		
1328	6373	FMP	OPERAND	
1331	1615	FJMP+BKWD+.	-FADEXT	
1332	4435	FENTER		
1333	2204	FST+FWD+SLSHTMP-.		
1334	3473	FLD	OPERAND	
1335	7202	FDV+FWD+SLSHTMP-.		
1336	1522	FJMP+BKWD+.	-FADEXT	
1337	0000	SLSHTMP,0;0;0		
1340	0000			
1341	0000			
1342	1266	RELATE, TAD	OLDOP	
1343	1357	TAD	CONST	
1344	3353	DCA	THESKIP	
1345	6211	COF	0	/00000000 8 K INSERT.
1346	1753	TAD I	THESKIP	
1347	6211	COF	10	/00000000 8 K INSERT.
1350	3353	DCA	THESKIP	
1351	4435	FENTER		
1352	5473	FSB	OPERAND	
1353	7402	THESKIP,HLT		
1354	1204	FJMP+FWD+4		
1355	3151	FLD	ONE	
1356	2000	FEXIT		
1357	5243	JMP	OPDONE	
1361	3152	FLD	ZERO	
1361	0000	FEXIT		
1362	5203	JMP	OPDONE	
1363	4515	JMS I	PPOP	
1364	3066	DCA	OLDOP	
1365	5456	JMP I	OLDOP	
1366	0023	023,		
1367	5253	CONST,		
1370	0152	FSEQ		
1371	0140	FSGT		
1372	0110	FSLT		
1373	0100	FSGE		
1374	0152	FSLE		
1375	0040	FSNE		

PAGE

```
1400 0000 GETADDR,0
1401 6201 CDF
1402 1602 TAD I
1403 3014 DCA INDEX2
1404 2200 ISZ GETADDR
1405 1604 TAD I
1406 3362 DCA GSS1
1407 2200 ISZ GETADDR
1408 1604 TAD I
1409 1600 DCA GSS2
1410 3353 ISZ GETADDR
1411 2200 CDF
1412 6211 TAD I
1413 1414 DCA ADDRESS
1414 3067 ISZ ADDRESS
1415 2067 TAD CLA
1416 1362 SNA
1417 7692 JMP
1418 5262 CLL CMA
1419 1414 TAD I
1420 7450 SNA
1421 5261 JMP ALLOC
1422 7140 CLL CMA
1423 1362 TAD GSS1
1424 7630 SZL CLA
1425 5372 JMP
1426 1414 TAD I
1427 3364 DCA INDEX2
1428 1353 DCA GDIM2
1429 7452 SNA
1430 5253 JMP NOSS2
1431 7141 CLL CIA
1432 1364 TAD GDIM2
1433 7622 SNL CLA
1434 5372 JMP
1435 1362 TAD SSERR
1436 7041 CIA
1437 3362 DCA GSS1
1438 7412 SKP
1439 1364 TAD GDIM2
1440 2362 ISZ GSS1
1441 5246 JMP
1442 1362 TAD
1443 7041 CIA
1444 3362 DCA
1445 7412 SKP
1446 1364 TAD
1447 2362 ISZ
1448 5246 JMP
1449 1362 TAD
1450 3362 DCA
1451 1362 TAD
1452 7144 CLL RAL
1453 1362 TAD
1454 1362 TAD
```

/..... 8 K INSERT.

/..... 8 K INSERT.



PAL8

/BASIC.L8E

ADDRESS	INSTR	OPERAND	COMMENT
1456	TAD	ADDRESS	
1457	DCA	ADDRESS	
1458	JMP I	GETADDR	
1459	ISZ	DIMFLAG	
1460	SKP		
1461	JMP	ISDIM	
1462	DCA	DIMFLAG	
1463	TAD	GSS2	
1464	SZA	CLA 013	
1465	TAD	GSS2	
1466	DCA	013	
1467	TAD	GSS1	
1468	DCA	GSS2	
1469	TAD		
1470	SNA	IAC	
1471	CIA		
1472	DCA	GDIM2	
1473	ISZ	NOINT	
1474	CLA	CLL IAC	
1475	TAD	GSS1	
1476	SZL	I	
1477	JMP I	PSPACERR	
1478	ISZ	GDIM2	
1479	JMP	4	
1480	DCA	GDIM2	
1481	TAD	GDIM2	
1482	CLL	CML RAL	
1483	SML		
1484	TAD	GDIM2	
1485	DCA	GDIM2	
1486	TAD	GDIM2	
1487	SZL	I	
1488	JMP I	PSPACERR	
1489	JNS I	SPLEFT	
1490	SKP	I	
1491	JMP I	PSPACERR	
1492	CLA	CLL CMA RAL	
1493	TAD	INDEX2	
1494	DCA	INDEX2	
1495	TAD	ARRLOC	
1496	DCA	INDEX2	
1497	TAD	GSS1	
1498	DCA	INDEX2	
1499	TAD	GSS2	
1500	DCA	INDEX2	
1501	CLA	CMA	
1502	TAD	ADDRESS	
1503	DCA	07774	
1504	TAD	GSS2	
1505	DCA	I	
1506	TAD	ADDRESS	
1507	ISZ	ADDRESS	
1508	JMS I	PSTICKIT	
1509	ISZ	GSS2	

/FORHID INTERRUPTS NOW.


```

1535 5341 JMP      .-4
1536 1364 TAD      GDM2
1537 7041 CIA
1538 1160 TAD      04
1539 3364 DCA      GDM2
1540 4521 JMS I   PSTICKIT
1541 2364 ISZ      GDM2
1542 5352 JMP      .-2
1543 7345 CLA CLL  CMA RTL
1544 1233 TAD      GETADDR
1545 3202 DCA      GETADDR
1546 4543 JMS I   CNCLR
1547 5241 JMP      GETADDR+1
1548 0381, 0
1549 0382, 0
1550 0382, 0
1551 0370 PSPACER, SPACERR
1552 7774 07774, 7774
1553 013, 13
1554 477 SSERR,
1555 2325 JMS I   PEROR
1556 2223 TEXT 'SUBSCRIPT'
1557 0322
1558 1120
1559 2400

```

/CHECK FOR CONTROL C.

```

1576 1352 DEF,
1577 3013 LINENO
1578 1413 INDEX1
1579 3220 TAD I   INDEX1
1580 4571 DCA      USERFN
1581 3754 GET+MUSTRE /'FN'
1582 4571 GET+MUSTRE /A VARIABLE
1583 7000 GET+MUSTRE /'1'
1584 3755 GET+MUSTRE /A VARIABLE
1585 7000 GET+MUSTRE /'1'
1586 3761 GET+MUSTRE /'1'
1587 3673 GET+MUSTRE /'1'
1588 5617 JMP I   PSKIPIT
1589 0457 PSKIPIT, SKIPIT
1590 0382 USERFN, 0
1591 4574 MORERD, MUSTRE
1592 3763 JMS I   PGETVAR
1593 4513 CLA CMA
1594 7246 TAD      LOCCTR
1595 3273 DCA      LOCIMP

```

> MP #

poly 1 org 71
poly 1 org 71
poly 1 org 71

/BASIC.LRE

1627	1246	TAD	READLOC	
1630	3445	DCA	LOCCTR	
1631	4567	GET+ISIT	/ (CR) OR '0'	
1632	2000	2000		
1633	7410	SKP		
1634	5200	JMP	SEARCH	/A LINENO
1635	4550	ISIT		
1636	0000	0000		
1637	7410	SKP		
1640	5200	JMP	SEARCH	/,,'
1641	4560	ISIT		
1642	3753	3753		
1643	5267	JMP	DATAERR	
1644	4501	JMS I	PEVAL	
1645	7242	CLA CMA		
1646	1045	TAD	LOCCTR	
1647	3746	DCA	READLOC	
1650	1273	TAD	LOCCTMP	
1651	3245	DCA	LOCCTR	
1652	4512	JMS I	PSTOVAR	/ (CR) OR '0'
1653	4567	GET+ISIT		
1654	2000	2000		
1655	5221	JMP	MORERD	
1656	5523	JMP I	PEXECUTE	
1657	4177	JMS	GETWD	/ 'DATA'
1660	4560	SEARCH, ISIT		
1661	1757	1757		
1662	7410	SKP		
1663	5244	JMP	ISSOME	/ (EOF)
1664	4566	ISIT		
1665	1755	1755		
1666	5257	JMP	SCHMOR	
1667	4477	JMS I	PERROR	
1670	0421	DATAERR, JMS I	TEXT 'DATA'	
1671	2491	2491		
1672	0000	0000		
1673	0000	0000		
1674	0000	JMS I	PCHKFIT	
1675	4563	TAD	CODELOC	
1676	1304	DCA	LOCCTR	
1677	3045	TAD	CODELOC	
1701	1356	TAD	ABCDEF	
1702	3004	DCA	CODELOC	
1703	1004	TAD	CODELOC	
1704	3357	DCA	BCDEFG	
1705	1005	TAD	PSYMTAB	/UPDATE SYMBOL TABLE NOW.
1706	1356	TAD	ABCDEF	/BY ADDING IN CORRECTION FACTOR.
1707	3005	DCA	PSYMTAB	
1710	1445	STBKLP, TAD I	LOCCTR	/MOVE TEXT NOW.
1711	2045	ISZ	LOCCTR	
1712	3757	DCA I	BCDEFG	
1713	2357	ISZ	BCDEFG	
1714	1357	TAD	BCDEFG	/NOW CHECK FOR END.

1715	7241	CIA	PSYMTAB
1716	1045	TAD	
1717	7642	SZA	CLA
1720	5310	JMP	GTBKL
1721	7240	CLA	CMA
1722	1046	TAD	NSYMTAB
1723	3105	DCA	NSYMTAB
1724	1163	TAD	GSRPTR
1725	7440	CMA	
1726	1164	TAD	PGOLIST
1727	3357	DCA	BCDEFG
1732	1164	TAD	PGOLIST
1731	3050	DCA	WORD
1732	1356	TAD	ABCDEF
1733	1450	TAD	I WORD
1734	3450	DCA	I WORD
1735	2050	ISZ	WORD
1736	2357	ISZ	BCDEFG
1737	5332	JMP	.-5
1740	1453	TAD	FORCT
1741	3357	DCA	BCDEFG
1742	1350	TAD	PPFORLIS
1743	3350	DCA	WORD
1744	5352	JMP	.-6
1745	1356	TAD	ABCDEF
1746	1450	TAD	I WORD
1747	3450	DCA	I WORD
1751	2050	ISZ	WORD
1751	2150	ISZ	WORD
1752	2357	ISZ	BCDEFG
1753	5345	JMP	.-6
1754	1445	TAD	PSYMTAB
1755	5674	JMP	I GETBLK
1756	7774	ABCDEF, -4	
1757	0070	BCDEFG, 0	
1758	7738	PPFORLI, FORLIST+1	
1761	0070	PUTJ, 0	
1762	4576	JMS I	PPIX
1763	7200	CLA	
1764	1015	TAD	AC3
1765	4433	JMS I	PPUTCH
1766	4546	JMS I	PANORM
1767	5751	JMP I	PUTJ
1770	0070	GETJ, 0	
1771	4776	JMS I	PBEGFIX
1772	4432	JMS I	PGETCH
1773	3015	DCA	AC3
1774	4546	JMS I	PANORM
1775	5772	JMP I	GETJ
1776	3762	PBEGFIX, BEGFIX	

/GETS A CHARACTER FROM THE TTY.
 /CLEAN UP THE FAC
 /FECTH A CHAR.
 /SAVE IT, BABY!
 /AND NORMALIZE AC.
 /AND RETURN NOW.

PAGE

/RESET AC SWITCH SO NO INTERRUPT NOW.

2000	2134	NOTNOW, ISZ	NOINT	
2001	2350	ISZ	WORD	
2002	1450	TAD I	WORD	
2003	7450	SNA		
2004	5232	JMP	INSERT	
2005	3371	DCA	LOWLOC	
2006	3450	DCA I	WORD	
2007	1371	TAD	LOWLOC	
2008	3045	DCA	LOCCTR	
2009	4510	JMS I	PPASSCR	
2010	1371	TAD	LOWLOC	
2011	7341	CIA		
2012	1734	TAD	CODELOC	
2013	7550	SNA	INSRTS	
2014	5230	JMP	CLA	
2015	7341	CLA	CLL	
2016	1371	TAD	LOWLOC	
2017	3371	DCA	LOWLOC	
2018	7341	CLA	CLL	
2019	1045	TAD	LOCCTR	
2020	3045	DCA	LOCCTR	
2021	1771	TAD	LOWLOC	
2022	3445	DCA I	LOCCTR	
2023	5212	JMP	MOVE	
2024	1445	TAD	LOCCTR	
2025	3044	DCA	CODELOC	
2026	1357	TAD	FPTR	
2027	1240	TAD	MLINBUF	
2028	7441	CMA		
2029	3057	DCA	FPTR	
2030	7326	CLA	CLL	
2031	1057	TAD	FPTR	
2032	7452	SNA		
2033	5313	JMP	FIXLIN	
2034	7140	CMA		
2035	4553	JMS I	PCHKFIT	
2036	1234	TAD	CODELOC	
2037	3045	DCA	LOCCTR	
2038	1437	TAD I	PLINBUF	
2039	7341	IAC		
2040	3013	DCA	INDEX1	
2041	1413	TAD I	INDEX1	

2252	3073	DCA	OPERAND
2053	1413	TAD I	INDEX1
2054	3074	DCA	OPERAND+1
2055	4336	JMS	COMPARE
2056	5251	JMP	NOTFRST
2057	4351	JMS	SUBRA
2058	5333	JMP	TRANSF
2061	4517	NOTFRST, JMS I	PPASSCR
2252	4336	JMS	COMPAR
2063	5251	JMP	NOTFRST
2064	1045	TAD	LOCCTR
2065	3360	DCA	LSTLOC
2260	1024	TAD	CODELOC
2057	3345	DCA	LOCCTR
2271	4351	JMS	SUBRA
2071	4177	JMS	GETWD
2272	1050	TAD	WORD
2073	3772	DCA I	PUTLOC
2074	2372	ISZ	PUTLOC
2075	4177	JMS	GETWD
2076	1352	TAD	LSTLOC
2077	7041	CIA	
2100	1045	TAD	LOCCTR
2101	7540	SZA CLA	
2122	5272	JMP	MOVLUP
2103	1137	TRANSF, TAD	PLINBUF
2104	3060	DCA	GPTR
2105	1450	TAD I	GPTR
2106	2052	ISZ	GPTR
2107	3772	DCA I	PUTLOC
2110	2372	ISZ	PUTLOC
2111	2057	ISZ	FPTR
2112	5395	JMP	TRALUP
2113	4561	FIXLIN, JMS I	PLINFIX
2114	5520	JMP I	PEDIT

/THIS ROUTINE LOOKS FOR A "0" OR A C

2115	2030	IGNORE, 0			
2116	4567	GET+ISIT			/TEXT?
2117	5330	5020			/NOPE.
2120	5327	JMP	NOTBAD		
2121	4177	JMS	GETWD		
2122	1050	TAD	WORD		
2123	2070	AD	077		
2124	7540	SZA CLA			/END OF TEXT?
2125	5321	JMP	4		/NOPE.
2126	5316	JMP	IGNORE+1		/YEP. GET NEXT ITEM.
2127	4575	NOTBAD, JMS I	PISITLIT		/IS IT A LITERAL?
2130	7410	SKP			
2131	5316	JMP	IGNORE+1		/YES.
2132	4566	ISIT			
2133	2030				/"0" OR C.R.



2134 5316 JMP IGNORE+1 / N 0
 2135 5715 JMP I IGNORE /YES. RETURN TO CALLER.

2136 0340 COMPARE, 2
 2137 4567 GET+ISIT /A LINENO

2140 0332 JMP

2141 5356 IAMLESS

2142 1350 TAD WORD

2143 7101 IAC

2144 3113 DCA INDEX1

2145 1413 TAD INDEX1

2146 7141 CLL CIA

2147 1073 TAD OPERAND

2150 7522 SZA CLA

2151 5358 JMP FRSTNE

2152 1413 TAD I INDEX1

2153 7141 CLL CIA

2154 1074 TAD OPERAND+1

2155 7520 FRSTNE, SNL CLA /IS OPERAND<THIS LINENO

2156 2316 IAMLESS, ISZ COMPARE /YES

2157 5736 JMP I COMPARE

2160 0322 LSTLOC, 0

2161 0327 SUBRA, 0

2162 1057 TAD FPTR

2163 7100 CLL

2164 1024 TAD CODELOC

2165 3134 DCA CODELOC

2166 1024 TAD CODELOC

2167 3372 DCA PUTLOC

2170 5751 JMP I SUBRA

2171 0320 L0ALOC, 0

2172 0322 PUTLOC, 0

2173 4177 PRINT, JMS GETWD /THIS INSTRUCTION MAY BE COMBINED WI

2174 7346 INSTRUCTION BEL CLA CLL

2175 1131 TAD CMA RTL

2176 1131 TAD OUTDEV

2177 1131 TAD OUTDEV

2178 1131 TAD OUTDEV

2179 1351 TAD 0110

2180 3357 DCA TWIDTH

/7775=-3 FOR DEVICE CHECK.

/MULTIPLY DEVICE BY 3.

/SO THAT LPT=6, PTP=3, AND ITT=2.

/NOW ADD IN 72. THUS ITT=72, LPT=82.

/AND SAVE FOR FUTURE USE.


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1212 4566      ISIT      /CHECK FOR FIRST COMMA.  ONCE ONLY CH
1213 3763      PRINTC    /NO. CONTINUE CHECKING.
1214 5237      JMP       /YEP. GIVE BLANK, THEN TAB OVER.
1215 5277      PRINTBLK

1216 4177      PRINTG, JMS  /GET NEXT ELEMENT AFTER A TEXT ELEME
1217      IT.

1218 3345      PRINTC, DCA  /RESET TAB INDICATER.
1219 4566      ISIT      /CHECK TO SEE IF CARRIAGE RETURN.
1220 2000      JMP       /NOT A CARRIAGE RETURN. CONTINUE CHE
1221 5216      NOPCR      KING.

1222 4514      JMS I     PPRINTXT
1223 6531      CRLF
1224 5503      JMP I     PEXECUTE

1225 4566      NOPCR,    /IS IT A COMMA ("," )
1226 3763      ISIT      /NO. FINISH CHECKING BELOW.
1227 5316      JMP       /IT IS. PROCESS THE COMMA NOW.
1228 5373      JMP       /TEXT

1229 4566      PRINTHS, ISIT
1230 5000      JMS       NOTTXT
1231 5236      JMP       GETWD
1232 4177      PRINTG, JMS  WORD
1233 1352      TAD
1234 7412      RTR
1235 7412      RTR
1236 4260      RTR
1237 1350      TAD
1238 4260      JMS
1239 5225      JMP
1240 1241      NOTTXT, TAD
1241 5640      JMP I     PEVALGO
1242 1027      PEVALGO, EVALGO
1243 1027      PPRINTRE, PPRINTRET
1244 1345      PRINTRE, TAD
1245 7540      TABFLG    /WAS THERE A TAB PRESENT?
1246 5752      SZA CLA   /YEP. EXECUTE TAB CORRECTOR.
1247 1352      JMP I     /SEE IF ROOM FOR 13 PLACES(1+12).
1248 1352      TAD
1249 4346      JMS      CHECKW
1250 1124      TAD      ACS
1251 7710      SPA CLA   +3
1252 5254      JMP
1253 1751      TAD
1254 4433      JMS I     PPUTCH
1255 4517      JMS I     POUTNUM
1256 1451      TAD
1257 4433      JMS I     PPUTCH
1258 5237      JMP
1259 2004      PRINTHAF, 2
1260 0077      AND
1261 0070

```



```

2262 7452 SNA
2263 5216 JMP
      PRINTG /GO SKIP PAST TEXT ELEMENT AND CHECK
      NEXT.
2264 1326 TAD
2265 7450 SNA
2266 5560 JMP I
2267 1362 TAD
2268 2370 AND
2269 1351 TAD
2270 3224 DCA
2271 4346 JMS
      /SAVE CHARACTER FOR A SECOND.
      /CHECK TO SEE IF IT'LL FIT ON THE LI
      /RESTORE THE CHARACTER.
2272 1224 TAD
2273 4433 JMS I
2274 5560 JMP I
      /MAKE SURE AC IS ZERO.
2275 7230 PRINBLK,CLA
2276 1351 TAD
2277 4433 JMS I
      /CHECK TO SEE IF ROOM FOR ONE MORE.
      /SEE IF COLUMN ON COMMA BOUNDRY.
2278 1126 PRINCOM,TAD
2279 7450 SNA
2280 5312 JMP
2281 1327 TAD
2282 7532 SNA
2283 5304 JMP
2284 5277 JMP
      /YEP.
      /SUBTRACT A LITTLE AN CHECK AGAIN.
      /TOO FAR?
      /NOPE.
      /YEP. GIVE BLANK AND LOOP AGAIN.
      /((CR) OR '0'
2285 4567 PRINSEM,GET+ISIT
2286 2070 2070
2287 7410 SKP
2288 5523 JMP I
2289 4566 ISIT
2290 3762 PRENT,
2291 7410 SKP
2292 5312 JMP
2293 4566 ISIT
2294 3763 JMP
2295 5277 PRINTHS
2296 7736 PRINBLK
2297 7762 007736, 7736
2298 7762 07762, 7762
2299 0000 LINFIX, 0
2300 1324 TAD
2301 3445 DCA
2302 4177 LOCCTR
2303 1450 JMS
2304 7540 TAD I
2305 5730 SZ CLA
2306 2050 JMP I
2307 7240 ISZ
2308 1245 CLA CMA
2309 3452 TAD
2310 4512 DCA I
2311 5333 JMS I
2312 5333 JMP LFXLUP
      /IS IT A LINENO
      /NO

```


345 2032 TABFLG, 0

/TAB FOUND FLAG.

346 2032 CHECKW, 0

/THIS ROUTINE CHECKS FOR LINE TOO LO

347 1126 TAD COLUMN

/GET WHERE AT NOW.

348 7242 CHA

/-WHEREAT-#OF PLACES IN OUT CHAR.

349 1357 TAD TWIDTH

/ADD IN WIDTH OF DEVICE.

350 7732 SNA CLA

/TOO BIG.

351 5746 JMP I CHECKW

/NAM. RETURN TO SENDER.

352 4514 JMS I PPRINTXT

/YEP.GIVE C.R.L.F.

353 5531 CRLF

/AND RETURN TO SENDER.

354 5746 JMP I CHECKW

/0 IS OK SINCE IT'LL BE SET UP CORRE

355 2012 TWIDTH, 0

/MAGIC CONSTANT.

356 2014 014, 14

/MDTH OF ITY PAPER.

357 0112 0110, 110

/ROUTINE WHICH PROCESS TAB CHARACTER

358 6350 TABTHR, TABDO

363 0073 MENDPDL,-ENDPDL-1

364 0000 PUSH, 0

DCA I PDL

365 3436

ISZ PDL

366 2036

TAD PDL

367 1036

TAD MENDPDL

368 1363

SZA CLA

369 7640

JMP I PUSH

370 5754

JMS I PERFOR

371 4477

TEXT 'EXPRESSION'

372 0532

373 2022

374 0523

375 2311

400 1716

401 0020

402 4541 EXIT,

JMS I PCONT

/WAIT FOR BUFFER TO EMPTY AND THEN C

403 1007

TAD 0215

404 4433

JMS I PPUTCH


```

225 1410 EDIT, TAD 0212 JMS I PPUTCH /RESET DEVICE
226 4433 TAD OUTD2
227 1130 DCA OUTDEV /CHECK TO SEE IF AC WAS TYPED.
228 3131 JMS I CNCLR
229 4543 TAD PXXTHEN
230 1352 JMS I PGETLIN
231 4524 TAD I PLINBUF
232 1437 DCA WORD
233 3452 TAD I WORD
234 1452 SNA CLA
235 7650 JMP I PNOTNOW
236 5765 TAD 0212
237 1410 JMS I PPUTCH /RESET I/O DEVICE.
238 4433 TAD OUTD2
239 1130 DCA OUTDEV /'RUN'
240 3131 ISIT
241 4566 3736
242 1352 SKP
243 4524 RUN
244 5765 JMP /'LIS'
245 1410 ISIT
246 4433 3737
247 1130 SKP
248 3131 JMP I PLIST /'SCR'
249 4566 ISIT
250 5765 3735
251 1410 JMP
252 4433 SCRATCH, TAD
253 1130 DCA CODELOC
254 3131 TAD PXEOF
255 4566 DCA I PPERMSYM
256 5765 TAD PPERMSYM
257 1410 IAC
258 4433 DCA PSYMTAB
259 1130 CLA CMA
260 3131 DCA NSYMTAB
261 4566 JMS I PRESET /RESET DEVICES AFTER SCRATCH.
262 5765 JMS I CLEARV
263 1410 JMP I PEXECUTE
264 4433 TAD PLINBUF
265 1130 DCA LOCCTR
266 3131 TAD PXEOF
267 4566 DCA LIMENO
268 5765 JMP I PEXECUTE
269 1410 PJSET, SETUP
270 4433 CLEARV,
271 1130 JMS I PJSET
272 3131 JMP RUNIN
273 4566 TAD I EPTR
274 5765 TAD 07003A /IS IT A VARIABLE
275 1410 SZA CLA /NO
276 4433 JMP RUNNOT
277 1130 ISZ EPTR
278 3131
279 4566
280 5765

```


2472	1450	TAD	I	EPTR	
2473	3469	DCA		GPTR	
2474	1450	TAD	I	GPTR	
2475	3456	DCA	I	EPTR	
2476	7414	SKP			
2477	2456	RUNNOT, ISZ		EPTR	
2478	2456	ISZ		EPTR	
2479	2456	ISZ		EPTR	
2480	2456	ISZ		EPTR	
2481	2456	ISZ		EPTR	
2482	2456	ISZ		EPTR	
2483	2456	ISZ		EPTR	
2484	5263	JMP		RUNLUP	
2485	1361	TAD		PLIMIT	
2486	3433	DCA		ARRLOC	
2487	1415	TAD		PSYMTAB	
2488	3456	DCA		EPTR	
2489	1420	TAD		NSYMTAB	
2490	3457	DCA		FPTR	
2491	5343	JMP		RUN2IN	
2492	1456	RUN2LUP, TAD	I	EPTR	
2493	1360	SZA	CLA	07002A	/IS IT A VARIABLE.
2494	5337	JMP		RUN2NOT /NO	
2495	2450	ISZ		EPTR	
2496	1450	TAD	I	EPTR	
2497	3431	DCA		TMP	
2498	1443	TAD		ARRLOC	
2499	3456	DCA	I	EPTR	
2500	1431	TAD		TMP	
2501	4521	JMS	I	PSICKIT	
2502	4521	JMS	I	PSICKIT	
2503	4521	JMS	I	PSICKIT	
2504	4521	JMS	I	PSICKIT	
2505	2450	ISZ		EPTR	
2506	3456	DCA	I	EPTR	
2507	2450	ISZ		EPTR	
2508	3450	DCA	I	EPTR	
2509	5342	JMP		.+4	
2510	2450	RUN2NOT, ISZ		EPTR	
2511	2450	ISZ		EPTR	
2512	2450	ISZ		EPTR	
2513	2450	ISZ		EPTR	
2514	2457	RUN2IN, ISZ		FPTR	
2515	5314	JMP		RUN2LUP	
2516	1034	TAD		CODELOC	
2517	3445	DCA		LOCCTR	
2518	1125	TAD		PPCLIST	
2519	3436	DCA		PCL	
2520	1014	TAD		CODELOC	
2521	3440	DCA		READLOC	
2522	7240	CLA	CMA		
2523	3763	DCA		FORCT	
2524	1164	TAD		PGOLIST	
2525	3165	DCA		GS8PTR	
2526	5562	JMP	I	CLEARV	
2527	7420	07002A, 7004			

/HASIC.LRE

/FIRST WORD OF USER AREA

```

2561 1430 PLIMIT, LIMIT
2562 7253 PAXTHEN, XTHEN
2563 3630 PLIST, LIST
2564 7502 PAXEOF, XEOF
2565 7022 PPERMSY, PERMSY
2566 2442 PNOTNOW, NOTNOW
2567 4252 END, JMS I
2571 4537 STOP, JMS I
2571 4541 JMS I
2572 4514 JMS I
2573 6525 READY
2574 JMP I
2574 5525 PEDIT
    
```

/RESET ALL DEVICES NOW,
/AND WAIT FOR I/O TO FINISH UP.
/AND GIVE THE STOP MESSAGE

PAGE

/CHECK TO SEE IF AC WAS TYPED WHILE

```

2620 4561 GETLPET, JMS I PLINFX
2621 4543 JMS I CMCLR
    HERE.
2622 JMP I GETLIN
2623 5633 GETLIN, 0
2624 3354 DCA SNUMFLG
2625 1131 TAD OUTDEV
2626 3130 DCA OUTD2
2627 3131 DCA OUTDEV
2628 1172 TAD PLREGIN
2629 3155 DCA EPTR
2630 1372 TAD 042
2631 3456 DCA I EPTR
2632 2156 ISZ EPTR
2633 4432 NEWCHAR, JMS I PGETCH
2634 3456 DCA I EPTR
2635 7240 CLA CMA
2636 1127 TAD INDEV
2637 7642 SZ4 CLA
2638 5225 JMP +4
2639 3133 DCA CNTLO
    
```

/GET THE OUTPUT DEVICE.
/SAVE FOR A SECOND.
/TURN OFF THE OUTPUT DEVICE.

/CHECK THE INPUT DEVICE NOW.
/GET IT, BABY.
/IS IT THE ITY?
/NOPE.
/IT IS. RESET CONTROL 0.

2713	1451	TAD I	HPTR
2714	7652	SNA CLA	
2715	5776	JMP I	POTHER
2716	1361	TAD	HPTR
2717	3252	DCA	WORD
2721	2361	ISZ	HPTR
2721	3224	DCA	ACS
2722	1452	TAD I	GPTR
2723	1454	TAD	07740
2724	7640	SZA CLA	
2725	5330	JMP	BSKIP
2725	2450	ISZ	GPTR
2727	5322	JMP	HLOOP
2732	7330	CLA CLL	CML RAR
2731	1324	TAD	ACS
2732	3024	DCA	ACS
2733	1451	TAD I	HPTR
2734	7330	SZL	
2735	2351	ISZ	HPTR
2736	7430	SZL	
2737	5343	JMP	.*4
2740	7012	RTR	
2741	7012	RTR	
2742	7312	RTR	
2743	0070	AND	077
2744	7452	SNA	
2745	5765	JMP I	JMATCH
2746	1054	TAD	07740
2747	7450	SNA	
2750	5332	JMP	BSKIP
2751	0072	AND	077
2752	1370	TAD	040
2753	7241	CLA	
2754	1450	TAD I	GPTR
2755	2362	ISZ	GPTR
2756	7552	SNA CLA	
2757	5322	JMP	HLOOP
2760	1451	TAD I	HPTR
2761	0070	AND	077
2762	2361	ISZ	HPTR
2763	7540	SZA CLA	
2764	5362	JMP	.*4
2765	5311	JMP	GLOOP
2766	6506	JMATCH	
2767	0436	36	
2770	0400	40	
2771	0122	122	
2772	0140	140	
2773	3737	03737B	3737
2774	7503	07623	7603
2775	7715	07715	7715
2776	3002	POTHER	OTHER
2777	7223	PTABLE	XXPLUS

PAGE

3000	4310	OTHER,	JMS	NONBLNK
3001	1301		TAD	07763B
3002	7440	SZA		
3003	5223	JMP		NOTCR
3004	1325	TAD		PXXCRLF
3005	3457	DCA I		FPTR
3006	1057	TAD		FPTR
3007	3013	DCA		INDEX1
3010	1326	TAD		PXXEXIT
3011	3413	DCA I		INDEX1
3012	1013	TAD		INDEX1
3013	1241	TAD		MENDLIN
3014	7450	SNA		
3015	5522	JMP I		PGETLRET
3016	7710	SPA CLA		
3017	5212	JMP I		7
3020	5621	JMP I		PTUBIG
3021	2557	PTUBIG, TURIG		
3022	2612	PGETLRE, GETLRET		
3023	1322	NOTCR, TAD		07737
3024	7450	SNA		
3025	5724	JMP I		JDIGIT
3026	1312	TAD		07764B
3027	7130	CLL		
3030	1755	SZL		012
3031	7432	JMP I		JDIGIT
3032	5724	TAD		07725A
3033	1310	CLL		
3034	7130	TAD		032
3035	1321	SZL		
3036	7430	JMP I		PLEITTER
3037	5743	CLA CLL		CML RAR
3040	7330	TAD I		EPTR
3041	1456	DCA I		EPTR
3042	3456	REMPACK, TAD		PTXT
3043	1376	DCA I		PTH
3044	3457	ISZ		FPTH
3045	2057	TXTPAK, DCA		THISTXT
3046	3347	TAD I		EPTR
3047	1456	TAD		07763B
3050	1341	SNA		
3051	7450	JMP		CRINTXT
3052	5270	TAD		07753
3053	1344	SNA CLA		
3054	7650	JMP		QOINTXT
3055	5372			

3456	1456	TAD I	EPTR
3457	0470	AND	077
3462	3456	DCA I	EPTR
3461	1347	TAD	THISXT
3462	7450	SNA	
3463	5272	JMP	LHALF
3464	1456	TAD I	EPTR
3465	3457	DCA I	EPTR
3466	2357	ISZ	FPTR
3467	5274	JMP	RHALF
3474	1455	LHALF,	TAD I
3471	7126	CLL	RTL
3472	7126	RTL	
3473	7126	RTL	
3474	2356	RHALF,	ISZ
3475	5246	JMP	TXTPAK
3476	1397	CRINTXT,	TAD
3477	5723	JMP I	JTXIT

3102	7725	07725A,	7725
3101	7763	07763B,	7763
3102	7754	077643,	7764

3103	3446	PLETTER, LETTER	
3124	7753	07753,	7753
3105	4200	04200,	4200
3106	0442	042,	42
3107	0002	THISXT,	0
3110	0002	NONBLNK,	0
3111	1456	TAD I	EPTR
3112	1054	TAD	07740
3113	7640	SZA	CLA
3114	5317	JMP	+3
3115	2056	ISZ	EPTR
3116	5311	JMP	NONBLNK+1
3117	1456	TAD I	EPTR
3120	5710	JMP I	NONBLNK
3121	0032	032,	32
3122	7737	07737,	7737
3123	3231	JTXIT,	MTXIT
3124	3234	JOIGIT,	DIGIT
3125	7226	PXCRFL,	XXCRFL
3126	7605	PXEXIT,	XXEXIT
3127	4072	POPERA,	OPERAND-1
3130	7536	PXLIIT,	XXLIIT
3131	4435	LITRAL,	FEETER
3132	2073	FST	OPERAND
3133	0240	FEXIT	
3134	1075	TAD	OPERAND+2
3135	7640	SZA	CLA
3136	5346	JMP	ALL3
3137	1074	TAD	OPERAND+1
3140	7640	SZA	CLA
3141	5347	JMP	JUST2

3142	1273	TAD	OPERAND
3143	7650	SNA	CLA
3144	5350	JMP	JUST0
3145	7344	CLA	CLL CMA RAL
3146	7341	IAC	
3147	1362	TAD	02
3148	7340	CMA	
3149	7340	DCA	TMP
3150	7340	TAD	POPERA
3151	3331	DCA	INDEX1
3152	1327	TAD	TMP
3153	3213	DCA	
3154	1331	TAD	
3155	7342	CMA	PXLIT0
3156	1332	TAD	JUST0P
3157	5353	JMP	
3158	6231	CDF	0
3159	1413	TAD	INDEX1
3160	6211	CDF	10
3161	3457	DCA	FPTR
3162	2357	ISZ	FPTR
3163	2331	ISZ	TMP
3164	5367	JMP	JUST0F
3165	5516	JMP	PSLOOP

/..... 8 K INSERT.

/..... 8 K INSERT.

3172	1347	DGINTXT, TAD	THISTXT
3171	2056	ISZ	EPTR
3172	7440	SZA	
3173	5376	JMP	*+3
3174	1335	TAD	04200
3175	5723	JMP	JTXIT
3176	1330	TAD	042
3177	3457	DCA	FPTR
3202	2457	ISZ	FPTR
3201	3457	DCA	FPTR
3202	2457	ISZ	FPTR
3203	5516	JMP	PSLOOP

3204	7227	DIGIT,	CLA	TAD	I	SNUMFLG			
3205	1464	TAD				01774			
3206	1376	SZA	/IS IT 'GOTO' OR 'THEN'						
3207	7442	IAC							
3210	7341	SZA							
3211	1375	TAD				01742			
3212	7657	SNA	CLA	/OR 'LIST'					
3213	7244	CLA	CMA	/YES					
3214	3064	DCA	SNUMFLG						
3215	4435	FENTER	ZERO						
3216	3152	FLD							
3217	2032	FEXIT							
3220	3365	DCA	OPFLAG						
3221	3365	DCA	DECFLAG						
3222	741W	SKP							

3224	2055	ISZ	EPTR	
3225	4522	JMS I	PNONBLNK	
3226	1316	TAD	07673	
3227	7450	SNA		
3228	5203	JMP	ITSE	
3231	1372	TAD	027	
3232	7450	SNA		
3233	5206	JMP	ITSDP	
3234	1374	TAD	07764C	
3235	7143	CLL		
3236	1285	TAD	012	
3237	7422	SNA		
3240	5331	JMP	ENDNUM	
3241	7116	CLL RAR		
3242	1373	TAD	02049A	
3243	3362	DCA	FDIGIT	
3244	7212	RAR		
3245	3361	DCA	FDIGIT+1	
3246	4435	FENTER		
3247	6545	FMPI	PTEN	
3250	4318	FAD+FWD+FDIGIT-		
3251	0000	FEXIT		
3252	1365	TAD	DPFLAG	
3253	7642	SZA CLA		
3254	2350	ISZ	DECFRAC	
3255	5224	JMP	DIGIN	
3256	1365	TAD	DPFLAG	
3257	7642	SZA CLA		
3258	5331	JMP	ENDNUM	
3261	2365	ISZ	DPFLAG	
3262	5224	JMP	DIGIN	
3263	3350	DCA	FDIGIT	
3264	1364	TAD	SNUMFLG	
3265	7642	SZA CLA		
3266	5331	JMP	ENDNUM	
3267	2356	ISZ	EPTR	
3270	4522	JMS I	PNONBLNK	
3271	1371	TAD	07725B	
3272	7450	SNA		
3273	5342	JMP	ITSP	
3274	1372	TAD	07776	
3275	7640	SZA CLA		
3276	5341	JMP	NOTSGN	
3277	2360	ISZ	FDIGIT	
3278	2356	ISZ	EPTR	
3281	4757	JMS I	JISDIG	
3282	5331	JMP	ENDNUM	
3283	2055	ISZ	EPTR	
3284	3361	DCA	FDIGIT+1	
3285	4767	JMS I	JISDIG	
3286	5322	JMP	ONLY	
3287	7230	CLA		
3288	1361	TAD	FDIGIT+1	
3311	7136	CLL RTL		
3312	1361	TAD	FDIGIT+1	

3313	7124	CLL RAL	FDIGIT+1
3314	3361	DCA	JISDIG
3315	4787	JMS I	7673
3316	7673	TAD	FDIGIT+1
3317	1361	DCA	FDIGIT+1
3318	3361	ISZ	EPTR
3321	2356	TAD	FDIGIT
3322	1360	CLL RAR	FDIGIT+1
3323	7110	TAD	
3324	1361	SNL	
3325	7428	CIA	
3326	7241	TAD	
3327	1366	DCA	DECFRAC
3330	3366	DCA	DECFRAC
3331	7240	CLA	DECFRAC
3332	1366	TAD	
3333	7740	SMA CLA	DIVXTEN
3334	1364	TAD	MULXTEN
3335	1363	TAD	MULEXP
3336	3346	DCA	DECFRAC
3337	1366	TAD	
3340	7510	SPA	
3341	7241	CIA	
3342	7440	CMA	
3343	3366	DCA	DECFRAC
3344	6352	JMP	*4
3345	4435	FENTER	
3346	7432	HLT	
3347	0000	MULEXP, FEXIT	
3350	2366	ISZ	DECFRAC
3351	6345	JMP	*4
3352	2364	ISZ	SNUMFLG
3353	5777	JMP I	PLITRAL
3354	4536	JMS I	PPIX
3355	7232	CLA	
3356	5757	JMP I	PCOMMON
3357	3404	PCOMMON, COMMON	
3360	0000	FDIGIT, 0;0;0	
3361	0310		
3362	0000		
3363	6545	MULXTEN, FMPI	PTEN
3364	1362	DIVXTEN, FDV-FMP	
3365	0310	DFELAG, 0	
3366	0000	DECFRAC, 0	
3367	6532	JISDIG, ISDIG	
3370	0027	027, 27	
3371	7725	07725H, 7725	
3372	7776	07776, 7776	
3373	2040	02040A, 2040	
3374	7764	07764C, 7764	
3375	1742	01742, 1742	
3376	1774	01774, 1774	
3377	3131	PLITRAL, LITRAL	

Address	Instruction	Comment
3457	TAD	012
3461	SNL CLA	
3461	JMP	SIMPLV
3461	TAD I	EPTR
3462	TAD	TNP
3463	DCA	TNP
3464	ISZ	EPTR
3465	TAD	PSYHTAB
3466	DCA	GPTR
3467	TAD	NSYHTAB
3470	DCA	HPTR
3471	JMP	VSCHIN
3472	VSCHIN	
3473	07706C, 7706	
3474	07000B, 7000	
3475	VSCHLUP, TAD I	GPTR
3476	TAD	07000B
3477	SZA CLA	
3502	JMP	VSCHNOT
3511	ISZ	GPTR
3512	TAD I	GPTR
3513	DCA	SNUMFLG
3514	TAD I	SNUMFLG
3515	CIA	
3516	TAD	TNP
3517	SZA CLA	
3518	JMP	VSCHNOT+1
3519	CLA CMA	
3520	ISDEF2, TAD	GPTR
3521	DCA	SNUMFLG
3522	ISDEF, TAD	SNUMFLG
3523	DCA I	FPTR
3524	ISZ	FPTR
3525	JMP I	PSLOOP
3526	VSCHNOT, ISZ	GPTR
3527	ISZ	GPTR
3528	ISZ	GPTR
3529	VSCHIN, ISZ	HPTR
3530	JMP	VSCHLUP
3531	JMS I	PGETBLK
3532	DCA	SNUMFLG
3533	CLA CMA	
3534	TAD	SNUMFLG
3535	DCA	INDEX1
3536	TAD	01000
3537	DCA I	INDEX1
3538	TAD	ARRLOC
3539	DCA I	INDEX1
3540	DCA I	INDEX1
3541	JMS I	PCHKFIT
3542	TAD	TNP
3543	JMS I	PSTICKIT
3544	JMS I	PSTICKIT
3545	JMS I	PSTICKIT

/BASIC.LRE

JMS I PSTICKIT
JMP ITSDEF

01200, 1000
POP,

CLA CMA
TAD

DCA PDL
TAD I PDL

JMP I POP
FOURIF, TEXT '0000'

UGH1, TEXT '0100 BIG. LINE IGNORED'

3546 4521
3547 5314
3550 1320
3551 0010
3552 7240
3553 1436
3554 3736
3555 1436
3556 5751
3557 3737
3558 3737
3561 0000
3562 3724
3563 1717
3564 4002
3565 1107
3566 5630
3567 1411
3570 1006
3571 4011
3572 0710
3573 1722
3574 0544
3575 3700

PAGE

TAD I PXLINBUF
DCA WORD

/CHECK FOR A "*"

3476
JMP
CLA CMA

NOPE.
YES. SET UP PUTXRA BY GIVING A PH00

/CALL TO THE WAIT ROUTINE.
/AND GET ANOTHER WORD NOW.

/LINENO

PCONT
GETWD
LISTALL
WORD
WORD

TAD I
SNA
CODELOC
LOCCTR
GETWD

LISTALL, TAD
LISTSOM, DCA
LISTLUP, JMS

/ (EOF)

ISIT

1755

LIST,

3600 1746
3601 3450
3602 4566
3603 3476
3604 5210
3605 7240

NEW

3606 4541
3607 4177
3610 4566
3611 0000
3612 5210
3613 2050
3614 1450
3615 7452
3616 1324
3617 3045
3620 4177
3621 4566
3622 1755


```
3623 5230 LNOEND /NOT DUNE YET
3624 4541 PCOWT /WAIT FOR I/O TO FINISH AND CLEAN UP

JMS I JMS I LNOEND PRINTXT
JMS I JMS I PCOWT PEDIT /A LINENO
JMS I JMS I PRINTXT
FOURLF JMS I LIST2 /NO
JMP I JMS I WORD
JMS I JMS I PPRINUM
TAD JMS I 0240
JMS I JMS I PPUTCH
JMS I JMS I LISTLUP /A VARIABLE
JMS I JMS I ISIT
JMS I JMS I 7000
JMS I JMS I LIST3
JMS I JMS I WORD
JMS I JMS I ISZ
JMS I JMS I TAD I
JMS I JMS I DCA
JMS I JMS I TAD I
JMS I JMS I DCA
JMS I JMS I PRINVAR
JMS I JMS I PRINTXT
JMS I JMS I PRINVAR
JMS I JMS I LISTLUP
JMS I JMS I PRINVAR,0
JMS I JMS I LIST3,0
JMS I JMS I PISITLIT /ISIT A LITERAL
JMS I JMS I LIST4 /NO
JMS I JMS I POUTNUM /PRINT IT
JMS I JMS I LISTLUP /TEXT
JMS I JMS I ISIT
JMS I JMS I 5000
JMS I JMS I LIST5
JMS I JMS I GETWD
JMS I JMS I TAD WORD
JMS I JMS I PRINVAR
JMS I JMS I PRINTXT
JMS I JMS I WORD
JMS I JMS I 077
JMS I JMS I SZA CLA
JMS I JMS I L4LUP
JMS I JMS I LISTLUP
JMS I JMS I TAD WORD /ITS A SYSTEM SYMBOL
JMS I JMS I IAC
JMS I JMS I JMS
JMS I JMS I JMS
JMS I JMS I PRINTXT,0
JMS I JMS I SZA
JMS I JMS I JBPENT+1
JMS I JMS I 0
JMS I JMS I CDF
JMS I JMS I TAD I
JMS I JMS I ISZ
JMS I JMS I JBPENT,
JMS I JMS I DCA
JMS I JMS I PHLOOP, TAD I
JMS I JMS I 1442
```

/..... 8 K INSERT.
/..... 8 K INSERT.

/BASIC.L8E

```

3712 7012 RTR
3713 7012 RTR
3714 7012 RTR
3715 4324 JMS PRSUBR
3716 1442 TAD I PRTEMP
3717 4324 JMS PRSUBR
3720 2442 ISZ PRTEMP
3721 5311 JMP PRL00P
3722 6211 PRTXRET,CDF I 10
3723 5702 JMP I PRINTXT
3724 0010 PRSUBR, 0
3725 0070 AND 077
3726 7450 SNA
3727 5322 JMP
3732 1345 TAD
3731 7450 SNA
3732 5340 JMP CRLFPR
3733 1370 TAD 077
3734 0070 AND 077
3735 1451 TAD 0240
3736 4433 JMS I PPUTCH
3737 5724 JMP I PRSUBR
3738 1037 TAD 0215
3741 4433 JMS I PPUTCH
3742 1010 TAD 0212
3743 4433 JMS I PPUTCH
3744 5724 JMP I PRSUBR
3745 7741 07741, 7741
3746 7513 PALINBU, LINBU+1
3747 0000 PRINUM, 0
3750 7001 IAC
3751 3015 DCA
3752 4362 JMS
/SET UP FAC TO RECEIVE INTEGER DATA.

3753 1413 TAD I INDEX1
3754 3017 DCA AC2
3755 1413 TAD I INDEX1
3756 3216 DCA AC3
3757 4546 JMS I PANORM
3760 4517 JMS I POUTNUM
3761 5747 JMP I PRINUM

/SETS UP FOR INTEGER TO AC MODE.
/CLEAR THEM ALL, EXCEPT FOR LOW WORD

3762 2000 BEGFIX, 0
3763 3017 DCA AC2
3764 3120 DCA AC1
3765 3012 DCA OV
3766 3024 DCA ACS
3767 1372 TAD 0233
3770 3026 DCA ACE
3771 5762 JMP I BEGFIX
3772 0233 233

```



```

3773 4571 RESTORE,GET+HUSTBE / (CR) OR '0'
3774 2000 TAD
3775 1004 CODELOC
3776 3046 READLOC
3777 5523 JMP I PEXECUTE

```

PAGE

```

4000 4566 MOREIN, ISIT / (CR) OR '0'
4001 2000 JMP
4002 5234 INPLUP
4003 1010 TAD
4004 4433 JMS I PPUTCH
4005 1130 TAD OUTD2
4006 3131 DCA OUTDEV
4007 7240 INPUT, CLA CMA
4008 1127 TAD INDEV
4009 7644 SZA CLA
4010 5224 JMP IPNOPE
4011 1131 TAD OUTDEV
4012 4504 JMS I PPUSH
4013 7201 CLA IAC
4014 3131 DCA
4015 4541 JMS I PCOMT
4016 1070 TAD
4017 4433 JMS I PPUTCH
4018 4535 JMS I PPOP
4019 3131 DCA OUTDEV
4020 1745 TAD LOCCTR
4021 3565 DCA I GSRPTR
4022 1276 TAD PTEXT
4023 4524 JMS I PGETLIN
4024 1565 TAD I GSRPTR

```

/GET THE OLD OUTPUT DEVICE.
 /AND RESET IT.
 /CHECK THE INPUT DEVICE NOW.
 /ARE WE INPUT FROM THE TELETYPE.
 /NOPE.
 /GET THE OUTPUT DEVICE.
 /SAVE IT FOR A SECOND.
 /SET OUTPUT DEVICE TO TTY FOR "?"
 /WAIT FOR OUTPUT TO FINISH, THEN CON
 /RESET OUTPUT DEVICE NOW.

4031	3045	DCA	LOCCTR
4032	1037	TAD	PLINBUF
4033	3253	DCA	INPPTR
4034	4513	DCA	PGETVAR
4035	1050	JMS	WORD
4036	3254	TAD	INWDTMP
4037	1245	DCA	LOCCTR
4038	3255	TAD	INLCTMP
4039	1253	DCA	INPPTR
4040	3045	DCA	LOCCTR
4041	4541	JMS	PEVAL
4042	1245	TAD	LOCCTR
4043	3253	DCA	INPPTR
4044	1255	TAD	INLCTMP
4045	3045	DCA	LOCCTR
4046	4512	JMS	PSTOVAR
4047	7332	CLA	CLL CML RTR
4048	1564	TAD	I INWDTMP
4049	7642	SZA	CLA
4050	5200	JMP	MOREIN
4051	1010	TAD	0212
4052	4433	JMS	I PPUTCH
4053	1130	TAD	OUT02
4054	3131	DCA	OUTDEV
4055	3126	DCA	COLUMN
4056	5503	JMP	I PEXECUTE
4057	0000	INPPTR,	0
4058	0000	INWDTMP,	0
4059	0000	INLCTMP,	0
4060	0000	XGISIT,	0
4061	4177	JMS	GETAD
4062	1266	TAD	XGISIT
4063	3273	DCA	XISIT
4064	5274	JMP	XISIT+1
4065	0000	XISIT,	0
4066	1450	TAD	I WORD
4067	5201	COF	0
4068	1573	TAD	I XISIT
4069	5211	COF	10
4070	2273	ISZ	XISIT
4071	7654	SNA	CLA
4072	2273	ISZ	XISIT
4073	5673	JMP	I XISIT
4074	0000	ISITLIT,	0
4075	1450	TAD	I WORD
4076	7146	CLL	CMA RTL
4077	7332	CML	RTR
4078	3024	DCA	ACS
4079	1324	TAD	ACS
4080	1150	TAD	04
4081	7620	SNA	CLA
4082	5704	JMP	I ISITLIT
4083	2314	ISZ	ISITLIT
4084	3220	DCA	AC1
4085	3317	DCA	AC2

/RESET THE DEV, BABY

/XXXXXXXXXXXX 8 K INSERT.

/XXXXXXXXXXXX 8 K INSERT.


```
4120 3016 DCA AC3
4121 4333 JMS ISLIT
4122 3016 DCA AC3
4123 4333 JMS ISLIT
4124 3017 DCA AC2
4125 4333 JMS ISLIT
4126 3220 DCA AC1
4127 4435 DCA FENTER
4130 3016 FLD AC3
4131 4000 FEXIT
4132 5734 JMP I ISLIT
4133 0000 ISLIT, 0
4134 2024 ISZ AC5
4135 7410 SKP
4136 5327 JMP LOADED
4137 4177 JMS GETWO
4140 1050 TAD WORD
4141 5733 JMP I ISLIT
4142 0000 ERROR, 0
4143 4537 JMS I PRESET
4144 4514 JMS I PPRINTXT
4145 6531 CRLF
4146 1342 TAD ERROR
4147 3351 DCA .+2
4150 4514 JMS I PPRINTXT
4151 7432 HLT
4152 4514 JMS I PPRINTXT
4153 4170 OERRR
4154 1452 TAD I LINENO
4155 7710 SPA CLA
4156 5353 JMP .+5
4157 4514 JMS I PPRINTXT
4160 6451 ATLINE
4161 1032 TAD LINENO
4162 4523 JMS I PPRINUM
4163 4514 JMS I PPRINTXT
4164 6531 CRLF
4165 1125 TAD PPOLIST
4166 3036 DCA PDL
4167 5520 JMP I PEDIT
4170 4025 OERRR, TEXT, ERROR,
4171 2222
4172 1722
4173 0000
```

PAGE

/ JMS FPT /ENTER FLOATING POINT PACK

00000	/FEXIT
00040	/FSNE
00050	/FSEQ
00100	/FSGE
00110	/FSLT
00140	/FSGT
00150	/FSLE

IF BIT 4 OFF THEN SAME AS PDP-8
IF BIT 4 ON THEN IF BIT 3 OFF THEN RELATIVE

52
—
—
a

S. 111

1XXX	/FJMP
2XXX	/FST
3XXX	/FLD
4XXX	/FAD
5XXX	/FSB
6XXX	/FMP
7XXX	/FDV

```

4202 0320 FPT, 0
4201 5204 JMP +3
4200 4506 FLOOP, JMS I
4203 2200 JSZ FPT
4204 6201 CDE 0
/..... 8 K INSERT.

```

//////// 8 K INSERT.

8 K INSERT.

4246	1734	TAD I	FPADDR
4247	7642	SZA	CLA
4250	7044	CMA	
4251	3156	DCA	FPFLAG
4252	1734	TAD I	FPADDR
4253	7012	PTR	
4254	7012	RAR	
4255	0671	AND	0377
4256	3032	DCA	OPE
4257	1734	TAD I	FPADDR
4260	0672	AND	07
4261	3023	DCA	OP1
4262	2334	ISZ	FPADDR
4263	1734	TAD I	FPADDR
4264	3022	DCA	OP2
4265	2334	ISZ	FPADDR
4266	1734	TAD I	FPADDR
4267	3021	DCA	OP3
4270	1273	FPNADDR, TAD	FPGOTO
4271	1274	TAD	FPJUMP
4272	3273	DCA	.+1
4273	7432	FPGOTO, HLT	
4274	5674	FPJUMP, JMP I	.
4275	4317	FPJMP	
4276	4322	FPSIO	
4277	4351	FPLAC	
4352	4456	FPADD	
4331	4453	FPSUB	
4332	4532	FPMUL	
4333	4567	FPDIV	
4374	0020	FPADDR, 0	
4315	1632	FPOWER, TAD I	FPT
4316	6211	CDF	10
4307	7152	SNA	
4312	5634	JMP I	FPT
4311	1345	TAD	07623
4312	3314	DCA	FPSKIP
4313	4333	JMS	HIGHWD
4314	7432	HLT	
4315	2222	ISZ	FPT
4316	5233	JMP	FPLOOP+1
4317	1324	FPJMP, TAD	FPADDR
4320	3200	DCA	FPT
4321	5234	JMP	FPLOOP+2
4322	4333	JMS	HIGHWD
4323	3734	DCA I	FPADDR
4324	2334	ISZ	FPADDR
4325	1317	TAD	AC2
4326	3734	DCA I	FPADDR
4327	2334	ISZ	FPADDR
4328	1116	TAD	AC3
4331	3734	DCA I	FPADDR
4332	5233	JMP	FPLOOP+1
4333	0020	HIGHWD, 0	
4334	1325	TAD	ACE

/..... 8 K INSERT.

/EASIO.LRE

4335	7124	CLL	RAL	
4336	7500	SMA		
4337	7106	CLL	RTL	
4340	7530	SPA	SZL	
4341	5345	JMP		07600
4342	1024	TAD		ACS
4343	1020	TAD		AC1
4344	5733	JMP	I	HIGHWD
4345	7532			7600
4346	1071	TAD		0377
4347	3025	DCA		ACE
4350	5334	JMP		HIGHWD+1
4351	1026	TAD		OPS
4352	3024	DCA		ACS
4353	1030	TAD		OPE
4354	3025	DCA		ACE
4355	1023	TAD		OP1
4356	3020	DCA		AC1
4357	1022	TAD		OP2
4358	3017	DCA		AC2
4361	1021	TAD		OP3
4362	3016	DCA		AC3
4363	3012	DCA		OV
4364	5202	JMP		FLOOP
4365	7041	UPARR2, CIA		
4366	3013	DCA		INDEX1
4367	4435	FENTER		
4370	3151	FLO		ONE
4371	0002	FEXIT		
4372	5370	JMP		.+4
4373	4435	FENTER		
4374	5073	FMP		OPERAND
4375	0000	FEXIT		
4376	2013	ISZ		INDEX1
4377	5373	JMP		.-4
4400	5601	JMP	I	.+1
4401	1203	OPDONE		

/(CMA) IF 1 ORG INDEXING

4402	0000	ARI,		
4403	1020	TAD		AC1
4404	7110	CLL	RAP	
4405	3020	DCA		AC1
4406	1017	TAD		AC2
4407	7010	RAR		
4410	3017	DCA		AC2
4411	1015	TAD		AC3
4412	7010	RAR		
4413	3015	DCA		AC3
4414	7010	RAR		
4415	3012	DCA		OV
4416	5612	JMP	I	ARI

4417	ACN,	2	TAD	POP3
4420		DCA	OADD	
4421		CLA	CLL	CMA RTL
4422		DCA	ARI	
4423		CML	RAL	
4424		TAD	I	OADD
4425		CIA		
4426		DCA	I	OADD
4427		ISZ		OADD
4430		ISZ	ARI	
4431		JMP		-6
4432		JMP	I	ACN
4433	POP3,	POP3		
4434	OADD,	OADD		
4435		CLL		
4436		TAD		AC3
4437		TAD		OP3
4440		DCA		AC3
4441		RAL		
4442		TAD		AC2
4443		TAD		OP2
4444		DCA		AC2
4445		RAL		
4446		TAD		AC1
4447		TAD		OP1
4450		DCA		AC1
4451		JMP	I	OADD
4452	FPSUB,	CLA	CLL	CML RAR
4453		TAD		OPS
4454		DCA		OPS
4455	FPADD,	ISZ		FPFLAG
4456		JMP		EOFAD
4457		TAD		ACE
4460		CLL	CIA	
4461		TAD		OPE
4462		SZL		
4463		JMP		BCKWDS
4464		DCA		OADD
4465		CLL	RAR	OP1
4466	ALGNLP,	TAD		OP2
4467		DCA		OP2
4470		DCA		OP2
4471		TAD		OP2
4472		DCA		OP2
4473		TAD		OP2
4474		DCA		OP2
4475		TAD		OP2
4476		DCA		OP2
4477		ISZ		OADD
4478		JMP		ALGNLP
4479		JMP		SETSGN
4480	BCKWDS,	CMA		
4481		DCA		OADD
4482		TAD		OPE
4483		DCA		ACE
4484		TAD		
4485		DCA		

4526	7412	SKP	ARI
4527	4232	JMS	OADD
4528	2235	ISZ	•-2
4529	5327	JMP	ACS
4530	1024	TAD	OPS
4531	1025	TAD	CLA
4532	7710	SPA	ACN
4533	4217	JMS	OADD
4534	4235	JMS	AC1
4535	1022	TAD	AC1
4536	7704	SMA	CLA
4537	5326	JMP	EOFAD
4538	7346	CLA	CLL CMA RTL
4539	4217	JMS	ACN
4540	1026	TAD	OPS
4541	3024	DCA	ACS
4542	3012	DCA	OV
4543	5775	JMP	PPLOOP
4544	2156	ISZ	FPFLAG
4545	5371	JMP	MULCLR
4546	1024	TAD	ACS
4547	1026	TAD	OPS
4548	3024	DCA	ACS
4549	1025	TAD	ACE
4550	1030	TAD	OPE
4551	1377	TAD	07577
4552	3025	DCA	ACE
4553	1024	TAD	AC1
4554	3026	DCA	OPS
4555	1017	TAD	AC2
4556	3030	DCA	OPE
4557	1016	TAD	AC3
4558	3031	DCA	TMP
4559	3020	DCA	AC1
4560	1152	TAD	07745
4561	3376	DCA	FPTEMP
4562	4212	JMS	ARI
4563	1026	TAD	OPS
4564	7010	RAR	OPS
4565	3026	DCA	OPE
4566	1030	TAD	OPE
4567	7010	RAR	OPE
4568	3030	DCA	OPE
4569	1031	TAD	TMP
4570	7010	RAR	TMP
4571	3031	DCA	TMP
4572	7430	ISZL	OADD
4573	4235	JMS	FPTEMP
4574	2376	ISZ	MPYLUP
4575	5352	JMP	PPLOOP
4576	5775	JMP	I
4577	7346	CLA	CLL CMA RTL
4578	3029	DCA	ACE
4579	3020	DCA	AC1
4580	5775	JMP	PPLOOP

4575 4282 RFPLOOP,FPLLOOP
 4576 0300 FPTMP, 0
 4577 7577 0/577, 7577

PAGE

4580 0300	ANORM, 0								
4581 1320	TAD	AC1							
4582 7452	SNA								
4583 5212	JMP	MAYZERO							
4584 1355	TAD	07770							/IS HIGH WORD ZERO?
4585 7710	SPA	CLA							/YEP. ENTIRE NUMBER MAY BE ZERO.
4586 5220	JMP	NOTBIG							
4587 4547	JMS	I							
4588 2025	ISZ	ACE							
4589 5201	JMP	ANORM+1							
4592 1017	MAYZERO, TAD	AC2							/IS SECOND WORD ZERO?
4593 7640	SZA	CLA							
4594 5220	JMP	NOTBIG							/NOPE. NORMAL NORMALIZE.
4595 1016	TAD	AC3							/1 & 2 ARE ZERO. IS THIRD WORD?
4596 7552	SNA	CLA							
4597 5245	JMP	UNDERF							/YEP. CLEAR AC. ALL ZERO.
4599 1012	NOTBIG, TAD	OV							
4599 7552	SNA	CLA							
4600 5233	JMP	NOBUMP							
4601 2016	ISZ	AC3							
4602 5233	JMP	NOBUMP							
4603 2017	ISZ	AC2							
4604 5233	JMP	NOBUMP							
4605 2022	ISZ	AC1							
4606 3012	DCA	OV							
4607 5201	JMP	ANORM+1							
4608 7240	CLA	CMA							
4609 1025	NOBUMP, TAD	ACE							
4610 7510	SPA								
4611 5245	JMP	UNDERF							
4612 3025	DCA	ACE							
4613 7345	CLA	CLL							
4614 1020	TAD	AC1							
4615 7740	SMA	SZA							
4616 5500	JMP	I							
4617 4254	JMS	ANORM							
4618 5232	JMP	ALI							
4619 7200	UNDERF, CLA	NOBUMP-1							
4620 3024	DCA	ACS							

4647 3025
4650 3020
4651 3017
4652 3016
4653 5630
4654 0000
4655 1016
4656 7104
4657 3016
4658 1017
4661 7004
4662 3017
4663 1020
4664 7004
4665 3020
4666 5054
4667 6201
4668 2156
4671 5336
4672 1024
4673 1020
4674 3024
4675 1030
4676 7041
4677 1020
4678 1027
4701 3025
4702 3031
4703 1043
4704 3020
4705 7330
4706 0023
4707 1022
4710 7030
4711 4742
4712 4557
4713 1031
4714 7004
4715 3031
4716 1030
4717 7004
4720 3030
4721 1026
4722 7004
4723 3026
4724 4550
4725 2220
4726 5305
4727 1026
4730 3020
4731 1030
4732 3017
4733 1031
4734 3016
4735 5741

DCA ACE
DCA AC1
DCA AC2
DCA AC3
JMP I ANORM
0
TAD AC3
CLL RAL
DCA AC3
TAD AC2
RAL
DCA AC2
TAD AC1
RAL
DCA AC1
JMP I AL1
CDF 0
ISZ FPFLAG
JMP FPZDIV
TAD ACS
TAD OPS
DCA ACS
TAD OPE
CIA
TAD ACE
TAD 0177
DCA ACE
DCA TMP
TAD 07743
DCA ANORM
CLA CLL CML RAR
AND OP1
TAD AC1
SMA CLA
JMS I PACN
JMS I POADD
TAD TMP
RAL TMP
DCA OPE
RAL OPE
DCA OPE
TAD OPS
PAL
DCA OPS
JMS I PAL1
ISZ ANORM
JAP DIVLP
TAD OPS
DCA AC1
TAD OPE
DCA AC2
TAD TMP
DCA AC3
JMP I PPFL00P

/..... 8 K INSERT.

4736	1371	FPZDIV, TAD	0377
4737	3225	ACA	ACE
4738	5741	JMP I	PPFLOOP
4741	4202	PPFLOOP, FPLLOOP	
4742	4417	PACN, ACN	
4743	7743	07743, 7743	
4744	0300	FIX,	
4748	1020	TAD	AC1
4748	7650	SNA CLA	
4747	5367	JMP	ZFIXEX
4750	1325	FIXLUP, TAD	ACE
4751	1377	TAD	07545
4752	7700	SNA CLA	
4753	5373	JMP	FIXEXIT
4754	4547	JMS I	PARI
4755	1024	TAD	ACS
4756	0012	AND	OV
4757	7640	SZA CLA	
4761	2016	ISZ	AC3
4761	5365	JMP	.+4
4762	2017	ISZ	AC2
4763	5365	JMP	.+2
4764	2020	ISZ	AC1
4765	2025	ISZ	ACE
4766	5352	JMP	FIXLUP
4767	3025	ZFIXEX, ACA	ACE
4770	3020	DCA	AC1
4771	3017	DCA	AC2
4772	3016	DCA	AC3
4773	3012	FIXEXIT, DCA	OV
4774	1016	TAD	AC3
4775	7031	SSFIX, IAC	
4776	5742	JMP I	FIX
4777	7545	07545,	7545

/(NOP) IF 1 ORG INDEXING

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5001	0000	OUTNUN, 0	
5001	6201	ACDF	
5002	1024	TAD	ACS
5003	7710	SNA CLA	
5004	5207	JMP	.+3
5005	1351	TAD	0255
5006	4433	JMS I	PPUTCH
5007	1720	TAD	AC1
5010	7640	SZA CLA	
5011	5215	JMP	NONZERO

/..... 8 K INSERT.


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5012 1011 TAD JMS I 0260 PPUTCH
5013 4433 JMS I 10 PPUTCH
5014 6211 CDF I 10 OUTNUM
5015 5032 JMP I FIXUP
5016 4745 NONZERO, JMS I 07771
5017 1355 TAD DCA PRTEMP
5018 3042 DCA PNUMBUF
5019 1014 TAD DCA ACE
5020 3025 DCA ACE
5021 6230 JMP .+5
5022 1020 CVTLOOP, TAD AC1
5023 0027 AND 0177
5024 3020 DCA AC1
5025 4760 JMS I PMPY
5026 1020 TAD AC1
5027 7006 RTL
5028 7006 RTL
5029 2347 AND 017
5030 1011 TAD 0260
5031 3425 DCA I ACE
5032 2025 ISZ ACE
5033 2042 ISZ PRTEMP
5034 5224 JMP CVTLOOP
5035 7326 CLA CLL CML RTL
5036 1043 TAD DECEXP
5037 7450 SNA
5038 5325 JMP FMT1 /.0NNNNNNN
5039 7510 SPA FMT2 /N.NNNNNNE+NN
5040 5253 JMP 07770
5041 1055 TAD FMT3 /OTHER THAN N.NNNNNNE+NN
5042 7710 SPA CLA FMT3 /N.NNNNNNE+NN
5043 5337 JMP PNUMBUF
5044 7200 CLA ACE
5045 3025 DCA ACE
5046 1357 TAD PRTEMP
5047 3042 DCA PRTEMP
5048 1425 TAD I ACE
5049 4433 JMS I PPUTCH
5050 1356 TAD 0256A
5051 4433 JMS I PPUTCH
5052 2025 ISZ ACE
5053 1352 TAD 0305
5054 4433 JMS I PPUTCH
5055 1043 TAD DECEXP
5056 7710 SPA CLA CML RTL
5057 1350 TAD 0253
5058 4433 JMS I PPUTCH
5059 3025 DCA ACE

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3121	1243	TAD	DECEXP
3122	7510	SPA	
3123	7341	CLA	
3124	3043	DCA	DECEXP
3125	1043	TAD	DECEXP
3126	1354	TAD	07766
3127	7512	SPA	
3128	5314	JMP	+4
3129	3043	DCA	DECEXP
3130	2225	ISZ	ACE
3131	5325	JMP	.-6
3132	7222	CLA	
3133	1225	TAD	ACE
3134	1211	TAD	0260
3135	4433	JMS I	PPUTCH
3136	1043	TAD	DECEXP
3137	1011	TAD	0260
3138	4433	JMS I	PPUTCH
3139	6211	ENTENF, CDF	10
3140	5000	JMP I	OUTNUM
3141	4514	JMS I	PPRINTXT
3142	7371	DCTZERO	0
3143	1355	TAD	07771
3144	3042	DCA	PRTEMP
3145	1361	TAD	PNSF6
3146	3025	TRYAGIN, DCA	ACE
3147	1425	TAD I	ACE
3148	1353	TAD	07520
3149	7540	SZA	CLA
3150	5344	JMP	ZERDONE
3151	2342	ISZ	PRTEMP
3152	7240	CLA	CMA
3153	1225	TAD	ACE
3154	5333	JMP	TRYAGIN
3155	5745	ZERDONE, JMP I	+1
3156	5545	PZERDONE	
3157	5227	FIXUP, FIXITUP	
3158	2317	017, 17	
3159	0253	0253, 253	
3160	2255	0255, 255	
3161	2325	0325, 325	
3162	7520	07520, 7520	
3163	7756	07756, 7756	
3164	7771	07771, 7771	
3165	2566	02566, 2566	
3166	7772	07772, 7772	
3167	5321	PNPY, MPY	
3168	5343	PNSF6, NUMBUF+6	
3169	3714	TOOLONG, TEXT	19LINE TOO LONG!
3170	1116		
3171	0540		
3172	2417		

/..... 8 K INSERT.

/..... 8 K INSERT.

/..... 8 K INSERT.
/..... 8 K INSERT.

166 1740
167 1417
170 1627
171 3700

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201	0320	FIXITUP,2	TAD	ACE
201	1325		TAD	07610
202	1345		DCA	ACE
203	3328		SKP	
204	7410		TAD	DECEXP
205	1043	OCC,	DCA	DECEXP
206	3043		TAD	AC1
207	1220	NORMIT,	RTL	
210	7006		SZL	CLA
211	7630		JMP	NORMED
212	5220		JMS I	PAL1
213	4550		CLA	CMA
214	7240		TAD	ACE
215	1025		DCA	ACE
216	3025		JMP	NORMIT
217	5207		TAD	ACE
220	1225	NORMED,	SMA	SZA
221	7540		JMP	NOTX10
222	5236		CLA	
223	7200		JMS I	PAR1
224	4547		JMS I	PAR1
225	4547		JMS I	PAR1
226	4547		JMS I	PAR1
227	4547		JMS	MPY
230	4321		TAD	ACE
231	1025		TAD	04
232	1150		DCA	ACE
233	3025		CLA	CMA
234	7240		JMP	OCC
235	5235		TAD	07773
236	1346	NOTX10,	SPA	
237	7510		JMP	EXPOK
240	5265		CLA	
241	7220		EXPGOOD,	TAD
242	1354		DCA	MPY
243	3321		CLL	
244	7100		DVLOOP,	TAD
245	1320		TAD	AC1
246	1347		SMA	05400
247	7532		DCA	AC1
250	3320			

251	7264	CLA	CML	CH	RA
252	3023	DCA		OP1	
253	4550	JMS	I	PAL1	
254	2023	ISZ		OP1	
255	2016	ISZ		AC3	
256	2321	ISZ		MPY	
257	5245	JMP		DVLOOP	
258	1020	TAD		AC1	
261	0371	AND		0377	
262	3020	DCA		AC1	
263	7201	CLA	IAC		
264	5205	JMP		00C	
265	3042	DCA		PRTEMP	
266	7410	SKP			
267	4547	JMS	I	PAR1	
270	2042	ISZ		PRTEMP	
271	5257	JMP		-2	
272	1020	TAD		AC1	
273	1347	TAD		05400	
274	7720	SMA	CLA		
275	5242	JMP		EXPGOOD	
276	7320	CLA	CLL		
277	1316	TAD		AC3	
278	1344	TAD		02062	
301	3016	DCA		AC3	
302	7430	SZL			
303	2017	ISZ		AC2	
304	7410	SKP			
305	2020	ISZ		AC1	
306	1020	TAD		AC1	
307	1347	TAD		05400	
310	7540	SZA	CLA		
311	5507	JMP	I	FIXITUP	
312	1155	TAD		0200	
313	3020	DCA		AC1	
314	3017	DCA		AC2	
315	3016	DCA		AC3	
316	2043	ISZ		DECEXP	
317	7000	NOP			
320	5530	JMP	I	FIXITUP	
321	0030				
322	4550	JMS	I	PAL1	
323	1020	TAD		AC1	
324	3023	DCA		OP1	
325	1017	TAD		AC2	
326	3022	DCA		OP2	
327	1010	TAD		AC3	
330	3021	DCA		OP3	
331	4550	JMS	I	PAL1	
332	4550	JMS	I	PAL1	
333	4557	JMS	I	POADD	
334	5721	JMP	I	MPY	
335	0000	NUMBUF, 0;0;0;0;0;0			
336	0000				
337	0300				

BASIC.LRE

340 0202
341 0202
342 0202
343 0202
344 2052
345 7610
346 7773
347 5400

02062, 2062
07610, 7610
07773, 7773
05400, 5400

350 0022 RNDJMP, FEXIT
351 4546 JMS I PANORM
352 5753 JNP I RND

353 0022 RND, 0
354 4435 FENTER
355 3227 FLD+FWD+FRNDX--
356 0100 FEXIT
357 1221 TAD OP3
358 7006 RTL
359 7006 RTL
360 7006 DCA
361 3422 TAD
362 1020 RAR
363 7410 AND
364 0054 DCA
365 3417 DCA
366 3416 JMS I POADD
367 4557 JMS I POADD
368 4557 JMS I POADD
369 4557 TAD OPE
370 1430 DCA ACE
371 3425 TAD AC1
372 1424 AND 07
373 0272 DCA AC1
374 3425 FENTER
375 4435 FST+FWD+FRNDX--
376 2232 FJMP+BKWD+-RNDJMP
377 1633

1404 2424 FRNDX, 2004:4173:1231
1405 4173
1406 1231

1407 0020 FSORX, 0:0:0
1410 0000
1411 0000

[illegible]


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1501 1413 TAD I INDEX1
1502 4504 JMS I PPUSH
1503 1413 TAD I INDEX1
1504 4504 JMS I PPUSH
1505 1413 TAD I INDEX1
1506 4504 JMS I PPUSH
1507 1313 TAD I INDEX1
1508 4504 JMS I PPUSH
1509 7344 CLA CLL CMA RAL
1510 1313 TAD I INDEX1
1511 3413 DCA FENTER
1512 4435 FSTI INDEX1
1513 2413 FEXIT
1514 4177 JMS GETWD /SKIP 'I'
1515 4177 JMS GETWD /SKIP 'I'
1516 4504 JMS I PEVAL
1517 4504 JMS I PPOP
1518 3150 DCA I WORD
1519 4504 JMS I WORD
1520 3452 CLA CMA
1521 7240 TAD WORD
1522 1352 DCA I PPOP
1523 3052 JMS I WORD
1524 4504 DCA I CMA
1525 7240 TAD WORD
1526 1352 DCA I PPOP
1527 3052 JMS I WORD
1528 4504 DCA I CMA
1529 7240 TAD WORD
1530 1352 DCA I PPOP
1531 3052 JMS I WORD
1532 4504 DCA I CMA
1533 7240 TAD WORD
1534 1352 DCA I PPOP
1535 3052 JMS I WORD
1536 4504 DCA I CMA
1537 7240 TAD WORD
1538 1352 DCA I PPOP
1539 3052 JMS I WORD
1540 4504 DCA I CMA
1541 7240 TAD WORD
1542 1352 DCA I PPOP
1543 3052 JMS I WORD
1544 4504 DCA I CMA
1545 7240 TAD WORD
1546 1352 DCA I PPOP
1547 3052 JMS I WORD
1548 4504 DCA I CMA
1549 7240 TAD WORD
1550 1352 DCA I PPOP
1551 3052 JMS I WORD
1552 4504 DCA I CMA
1553 7240 TAD WORD
1554 1352 DCA I PPOP
1555 3052 JMS I WORD
1556 4504 DCA I CMA
1557 7240 TAD WORD
1558 1352 DCA I PPOP
1559 3052 JMS I WORD
1560 4504 DCA I CMA
1561 7240 TAD WORD
1562 1352 DCA I PPOP
1563 3052 JMS I WORD
1564 4504 DCA I CMA
1565 7240 TAD WORD
1566 1352 DCA I PPOP
1567 3052 JMS I WORD
1568 4504 DCA I CMA
1569 7240 TAD WORD
1570 1352 DCA I PPOP
1571 3052 JMS I WORD
1572 4504 DCA I CMA
1573 7240 TAD WORD
1574 1352 DCA I PPOP
1575 3052 JMS I WORD
1576 4504 DCA I CMA
1577 7240 TAD WORD
1578 1352 DCA I PPOP
1579 3052 JMS I WORD
1580 4504 DCA I CMA
1581 7240 TAD WORD
1582 1352 DCA I PPOP
1583 3052 JMS I WORD
1584 4504 DCA I CMA
1585 7240 TAD WORD
1586 1352 DCA I PPOP
1587 3052 JMS I WORD
1588 4504 DCA I CMA
1589 7240 TAD WORD
1590 1352 DCA I PPOP
1591 3052 JMS I WORD
1592 4504 DCA I CMA
1593 7240 TAD WORD
1594 1352 DCA I PPOP
1595 3052 JMS I WORD
1596 4504 DCA I CMA
1597 7240 TAD WORD
1598 1352 DCA I PPOP
1599 3052 JMS I WORD
1600 4504 DCA I CMA

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1546 0352 PFNERR, FNERR

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1547 0352 TAB, JMS I PFI
1548 4504 CDF 0
1549 6201 CLA IAC
1550 7241 JMS I PTABFLG
1551 3771 TAD ACS
1552 1024

```

/FUNCTION "TAB" IN PRINT STATEMENT.
 /FIX THE FAC NOW.
 /SET DATA FIELD TO FIELD ZERO.
 /SET FLAG TO INDICATE WE'VE DONE THI
 /AND STORE AWAY.
 /GET SIGN OF FAC


```

1555 7650 SHA CLA /WAS IT A POSITIVE NUMBER?
1556 1016 TAD AC3 /YEP. PICK UP DESIRED POSITION.
1557 0071 AND 0377 /MAXIMUM OF 256 COLUMNS.
1558 3770 DCA I PTABDES /SAVE AWAY FOR ACTUAL SPACER TO USE.
1561 4772 JMS I TBEGFIX /PREPARE TO RETURN PRESENT COLUMN NU
1562 7231 CLA IAC /INCREMENT TO ACCOUNT FOR DIFFERENCE
1563 1126 TAD COLUMN /AND STORE AWAY.
1564 3016 DCA AC3 /RESET DATA FIELD NOW.
1565 5211 CDF 10 /NORMALIZE AC NOW.
1566 4546 JMS I PANORM /AND RETURN NOW.
1567 5747 JMP I TAB
1570 6367 PTABDES,TABDES /POINTER TO DESIRED LOCATION OF PRIN
HEAD.
1571 2345 PTABFLG,TABFLG /POINTER TO TAB IN PRINT FLAG.
1572 3762 TBEGFIX,BEGFIX /POINTER TO MINI-FIX-SET-UP ROUTINE.

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```

1573 7201 RUBO, CLA IAC /SET RUBOJT SWITCH.
1574 3135 NORUBO, DCA RBSNCH /AND CLEAN IT UP.
1575 5776 JMP I +1 /CLEAN-UP-POINTER.
1576 7175 DEVCOM

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1620 0020 TAN, 0
1621 4435 FENTER
1622 2275 FST+FWD+FIANT1-.
1623 0000 FEXIT
1624 4216 JMS COS
1625 4435 FENTER
1626 2274 FST+FWD+FIANT2-.
1627 3277 FLD+FWD+FIANT1-.
1628 0000 FEXIT
1629 4224 JMS SIN
1630 4435 FENTER

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5613	7267	FVD+FWO+FTANT2--.
5614	2230	FEXIT
5615	5620	JMP I TAN
5616	2410	0
5617	4435	FENTER
5620	4312	FAD+FWO+FSINC7--.
5621	0020	FEXIT
5622	4224	JMS SIN
5623	5610	JMP I COS
5624	0000	0
5625	4435	FENTER
5626	7255	FVD+FWO+FSINC1--.
5627	2256	FST+FWO+FSINZ--.
5630	2320	FEXIT
5631	3124	DCA ACS
5632	4576	JMS I PINT
5633	7330	CLA CLL CML RAR
5634	2335	AND FSINZ
5635	3024	DCA ACS
5636	4135	FENTER
5637	5245	FSR+FWO+FSINZ--.
5640	6275	FNP+FWO+FSINM4--.
5641	2244	FSIN10, FST+FWO+FSINZ--.
5642	2000	FEXIT
5643	3024	DCA ACS
5644	4135	FENTER
5645	5151	FSR ONE
5646	0140	FSGT
5647	1210	FJMP+FWO+FSINOK--.
5652	3235	FLO+FWO+FSINZ--.
5651	0022	FEXIT
5652	4575	JMS I PSGN
5653	2425	ISZ ACE
5654	4435	FENTER
5655	5230	FSR+FWO+FSINZ--.
5656	1615	FJMP+FKWD+--FSIN10
5657	3226	FLO+FWO+FSINZ--.
5658	6225	FNP+FWO+FSINZ--.
5661	2227	FST+FWO+FSINZ--.
5662	6234	FMP+FWO+FSINC3--.
5663	4236	FAD+FWO+FSINC4--.
5664	6224	FMP+FWO+FSINZ--.
5665	4237	FAD+FWO+FSINC5--.
5666	6222	FMP+FWO+FSINZ--.
5667	4240	FAD+FWO+FSINC6--.
5672	6220	FMP+FWO+FSINZ--.
5671	4241	FAD+FWO+FSINC7--.
5672	5213	FMP+FWO+FSINZ--.
5673	0002	FEXIT
5674	5624	JMP I SIN
5675	0726	SGN
5676	6434	PINT
5677	0000	FTANT1, 0;0;0
5700	0002	
5701	0000	

5702	0000	FTANT2, 0:0:0
5703	0000	
5704	0000	
5705	0000	FSINZ, 0:0:0
5706	0000	
5707	0000	
5708	0000	FSINZZ, 0:0:0
5709	0000	
5710	0000	
5711	0000	
5712	0000	
5713	2036	FSINC1, 2036;2207;7325
5714	2207	
5715	7325	
5716	1644	FSINC3, 1644;7553;6722
5717	7553	
5718	6722	
5719	5714	FSINC4, 5714;6223;1432
5720	6223	
5721	1432	
5722	1755	FSINC5, 1755;0632;1276
5723	0632	
5724	1276	
5725	6005	FSINC6, 6005;1256;7406
5726	1256	
5727	7406	
5728	2016	FSINC7, 2016;2207;7325
5729	2207	
5730	7325	
5731	6034	FSINM4, 6034;0000;0000
5732	0000	
5733	0000	
5734	0000	
5735	0000	
5736	0000	
5737	0000	
5738	4435	UPARRX, FENTER
5739	2034	FST+BKWD+.-FSINZ
5740	0100	FSCE
5741	1221	FJMP+FWD+EXPLONG-.
5742	2000	FEXIT
5743	4676	JMS I PINT
5744	4435	FENTER
5745	5642	FSB+BKWD+.-FSINZ
5746	2050	FSEQ
5747	1213	FJMP+FWD+EXPLONG-.
5748	3545	FLD+BKWD+.-FSINZ
5749	5207	FSB+FWD+FUPRC1-.
5750	0150	FSLE
5751	1207	FJMP+FWD+EXPLONG-.
5752	3551	FLD+BKWD+.-FSINZ
5753	0000	FEXIT
5754	5761	J&P I +1
5755	6457	UPARROW
5756	2077	FUPRC1, 2077;7700
5757	7700	
5758	3073	EXPLONG,FLD OPERAND
5759	0000	FEXIT
5760	4775	JMS I PLOG
5761	4435	FENTER
5762	6663	FMP+BKWD+.-FSINZ

5771 2502 FEXIT
 5772 4776 JMS I PEXP
 5773 5774 JMP I .+1
 5774 1233 OPDONE
 5775 6114 PLOG, LOG
 5776 6002 PEXP, EXP

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5777 2442 EXP, 0	5777 2442 EXP, 0	5777 2442 EXP, 0	5777 2442 EXP, 0
5778 4435 FENTER	5778 4435 FENTER	5778 4435 FENTER	5778 4435 FENTER
5779 7272 FDV+FWD+FEXPCI-	5779 7272 FDV+FWD+FEXPCI-	5779 7272 FDV+FWD+FEXPCI-	5779 7272 FDV+FWD+FEXPCI-
5780 2261 FST+FWD+FEXPU-	5780 2261 FST+FWD+FEXPU-	5780 2261 FST+FWD+FEXPU-	5780 2261 FST+FWD+FEXPU-
5781 2302 FEXIT	5781 2302 FEXIT	5781 2302 FEXIT	5781 2302 FEXIT
5782 4560 JMS I PPINT	5782 4560 JMS I PPINT	5782 4560 JMS I PPINT	5782 4560 JMS I PPINT
5783 7332 CLA CLL CML RAR	5783 7332 CLA CLL CML RAR	5783 7332 CLA CLL CML RAR	5783 7332 CLA CLL CML RAR
5784 1024 TAD ACS	5784 1024 TAD ACS	5784 1024 TAD ACS	5784 1024 TAD ACS
5785 3424 DCA ACS	5785 3424 DCA ACS	5785 3424 DCA ACS	5785 3424 DCA ACS
5786 4435 FENTER	5786 4435 FENTER	5786 4435 FENTER	5786 4435 FENTER
5787 2247 FST+FWD+FEXPI-	5787 2247 FST+FWD+FEXPI-	5787 2247 FST+FWD+FEXPI-	5787 2247 FST+FWD+FEXPI-
5788 4261 FAD+FWD+FEXPU-	5788 4261 FAD+FWD+FEXPU-	5788 4261 FAD+FWD+FEXPU-	5788 4261 FAD+FWD+FEXPU-
5789 2253 FST+FWD+FEXPF-	5789 2253 FST+FWD+FEXPF-	5789 2253 FST+FWD+FEXPF-	5789 2253 FST+FWD+FEXPF-
5790 6252 FMP+FWD+FEXPF-	5790 6252 FMP+FWD+FEXPF-	5790 6252 FMP+FWD+FEXPF-	5790 6252 FMP+FWD+FEXPF-
5791 4257 FAD+FWD+FEXPC2-	5791 4257 FAD+FWD+FEXPC2-	5791 4257 FAD+FWD+FEXPC2-	5791 4257 FAD+FWD+FEXPC2-
5792 2245 FST+FWD+FEXPU-	5792 2245 FST+FWD+FEXPU-	5792 2245 FST+FWD+FEXPU-	5792 2245 FST+FWD+FEXPU-
5793 3241 FLD+FWD+FEXPI-	5793 3241 FLD+FWD+FEXPI-	5793 3241 FLD+FWD+FEXPI-	5793 3241 FLD+FWD+FEXPI-
5794 3000 FEXIT	5794 3000 FEXIT	5794 3000 FEXIT	5794 3000 FEXIT
5795 4506 JMS I PFI	5795 4506 JMS I PFI	5795 4506 JMS I PFI	5795 4506 JMS I PFI
5796 7042 FXPFX, NOP	5796 7042 FXPFX, NOP	5796 7042 FXPFX, NOP	5796 7042 FXPFX, NOP
5797 3261 DCA FEXPI	5797 3261 DCA FEXPI	5797 3261 DCA FEXPI	5797 3261 DCA FEXPI
5798 1024 TAD ACS	5798 1024 TAD ACS	5798 1024 TAD ACS	5798 1024 TAD ACS
5799 7164 CMA CLL RAL	5799 7164 CMA CLL RAL	5799 7164 CMA CLL RAL	5799 7164 CMA CLL RAL
5800 1261 TAD FEXPI	5800 1261 TAD FEXPI	5800 1261 TAD FEXPI	5800 1261 TAD FEXPI
5801 7420 SML	5801 7420 SML	5801 7420 SML	5801 7420 SML
5802 7041 CIA	5802 7041 CIA	5802 7041 CIA	5802 7041 CIA
5803 7001 IAC	5803 7001 IAC	5803 7001 IAC	5803 7001 IAC
5804 3261 DCA FEXPI	5804 3261 DCA FEXPI	5804 3261 DCA FEXPI	5804 3261 DCA FEXPI
5805 4435 FENTER	5805 4435 FENTER	5805 4435 FENTER	5805 4435 FENTER
5806 3243 FLD+FWD+FEXPC3-	5806 3243 FLD+FWD+FEXPC3-	5806 3243 FLD+FWD+FEXPC3-	5806 3243 FLD+FWD+FEXPC3-
5807 7226 FDV+FWD+FEXPU-	5807 7226 FDV+FWD+FEXPU-	5807 7226 FDV+FWD+FEXPU-	5807 7226 FDV+FWD+FEXPU-
5808 4244 FAD+FWD+FEXPC4-	5808 4244 FAD+FWD+FEXPC4-	5808 4244 FAD+FWD+FEXPC4-	5808 4244 FAD+FWD+FEXPC4-
5809 5227 FSB+FWD+FEXPF-	5809 5227 FSB+FWD+FEXPF-	5809 5227 FSB+FWD+FEXPF-	5809 5227 FSB+FWD+FEXPF-
5810 2223 FLD+FWD+FEXPU-	5810 2223 FLD+FWD+FEXPU-	5810 2223 FLD+FWD+FEXPU-	5810 2223 FLD+FWD+FEXPU-
5811 3225 FST+FWD+FEXPF-	5811 3225 FST+FWD+FEXPF-	5811 3225 FST+FWD+FEXPF-	5811 3225 FST+FWD+FEXPF-
5812 6224 FMP+FWD+FEXPF-	5812 6224 FMP+FWD+FEXPF-	5812 6224 FMP+FWD+FEXPF-	5812 6224 FMP+FWD+FEXPF-
5813 5212 FMP+FWD+FEXPC5-	5813 5212 FMP+FWD+FEXPC5-	5813 5212 FMP+FWD+FEXPC5-	5813 5212 FMP+FWD+FEXPC5-
5814 4217 FAD+FWD+FEXPU-	5814 4217 FAD+FWD+FEXPU-	5814 4217 FAD+FWD+FEXPU-	5814 4217 FAD+FWD+FEXPU-

/(IAC IF 1 ORG INDEXING)

5046	2216	FST+FWD+FEXPU--
6047	3220	FLD+FWD+FEXPF--
6050	7214	FDV+FWD+FEXPU--
6051	4244	FAD+FWD+FEXPC6--
6052	2216	FST+FWD+FEXPF--
6053	0000	FEXIT
6054	1025	TAD ACE
6055	1261	TAD FEXPI
6056	3025	DCA ACE
6057	5007	JMP I EXP
6060	6434	PPINT, INT
6061	0200	FEXPI, 0;0;0
6062	0000	
6063	0000	FEXPU, 0;0;0
6064	0000	
6065	0000	
6066	0000	FEXPF, 0;0;0
6067	0000	
6068	0000	
6069	0000	
6070	0000	
6071	0000	
6072	2005	FEXPC1, 2005;4271;0300
6073	4271	
6074	0300	
6075	2075	FEXPC2, 2075;3552;7022
6076	3552	
6077	7022	
6078	6124	FEXPC3, 6124;6477;0715
6079	6477	
6080	0715	
6081	2044	FEXPC4, 2044;7643;0062
6082	7643	
6083	0062	
6084	1744	FEXPC5, 1744;3372;3400
6085	3372	
6086	3400	
6087	2004	FEXPC6, 2004;0000;0000
6088	0000	
6089	0000	
6090	0000	
6091	0000	
6092	1024	LOG, TAD ACS
6093	7712	SPA CLA
6094	5447	JMP I PARGERR
6095	1025	TAD ACE
6096	3355	DCA LOGACE
6097	1150	TAD 0200
6098	3025	DCA ACE
6099	4435	ENTER
6100	2641	FST+BKWD+-FEXPU
6101	4244	FAD+FWD+FLOGC1--
6102	2640	FST+BKWD+-FEXPF
6103	3644	FLD+BKWD+-FEXPU
6104	5241	FSD+FWD+FLOGC1--
6105	7643	FDV+BKWD+-FEXPF
6106	2644	FST+BKWD+-FEXPF
6107	6645	FMP+BKWD+-FEXPF

6135	6216	FMP+FWD+FLOGC2--
6136	4220	FAD+FWD+FLOGC3--
6137	6650	FMP+BKWD+--FEXPF
6140	6651	FMP+RKWD+--FEXPF
6141	4220	FAD+FWD+FLOGC4--
6142	6653	FMP+BKWD+--FEXPF
6143	5632	FSR+BKWD+--FEXPC6
6144	2655	FST+BKWD+--FEXPF
6145	3217	FLD+FWD+LOGFWD--
6146	5221	FSR+FWD+LOGOKW--
6147	4652	FAD+BKWD+--FEXPF
6152	6656	FMP+RKWD+--FEXPC1
6151	0010	FEXIT
6152	5714	JMP I LOG
6163	2004	FLOGC2, 2004:6253;2521
6164	6253	
6165	2021	
6166	2007	FLOGC3, 2007:5421;3604
6167	5421	
6168	3610	
6161	2025	FLOGC4, 2025:6125;1007
6162	6125	
6163	1007	
6164	2174	LOGFWD, 2174
6165	0000	LOGACE, 0
6166	0000	
6167	2174	LOGOKW, 2174:0200;0
6171	0200	
6171	0000	
6172	2005	FLOGC1, 2005:5202;3632
6173	5212	
6174	3632	

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ATN.	ATD	ACS	FATNSX
6200	0000		
6201	1024	DCA	FATNSX
6202	3272	DCA	ACS
6203	3024	FENTER	
6204	4435	FST+FWD+FATNT--	
6205	2271	FST+FWD+FATNAX--	
6206	2255	FSR+FWD+FATNCL--	
6207	5275	FSGT	
6210	0140	FJMP+FWD+ATNBIG--	
6211	1254		

6212	5275	FSB+FWD+FAINC2-.
6213	0140	FSGT
6214	1234	FJMP+FWD+ATNLOW-.
6215	3151	FLD ONE
6216	7250	FDV+FWD+FAINT-.
6217	2257	FST+FWD+FAINT-.
6220	3152	FLD ZERO
6221	2316	FST+FWD+FAINC-.
6222	3254	FLD+FWD+FAINT-.
6223	5267	FSR+FWD+FAINC3-.
6224	0100	FSGE
6225	1212	FJMP+FWD+ATNNOT-.
6226	3250	FLD+FWD+FAINT-.
6227	4266	FAD+FWD+FAINC4-.
6228	2246	FST+FWD+FAINT-.
6231	3314	FLD+FWD+FAINCJ-.
6232	7244	FDV+FWD+FAINT-.
6233	4262	FAD+FWD+FAINC4-.
6234	2242	FST+FWD+FAINT-.
6235	3253	FLD+FWD+FAINC5-.
6236	2301	FST+FWD+FAINC-.
6237	3237	FLD+FWD+FAINT-.
6240	6236	FMP+FWD+FAINT-.
6241	2240	FST+FWD+FAINT-.
6242	3261	FLD+FWD+FAINC6-.
6243	6236	FMP+FWD+FAINT-.
6244	4262	FAD+FWD+FAINC7-.
6245	6234	FMP+FWD+FAINT-.
6246	4263	FAD+FWD+FAINC8-.
6247	6232	FMP+FWD+FAINT-.
6250	4254	FAD+FWD+FAINC9-.
6251	6230	FMP+FWD+FAINT-.
6252	4151	FAD ONE
6253	6223	FMP+FWD+FAINT-.
6254	4263	FAD+FWD+FAINC-.
6255	2221	FST+FWD+FAINT-.
6256	3215	FLD+FWD+FAINAX-.
6257	5151	FSR ONE
6260	0140	FSGT
6261	1234	FJMP+FWD+ATNBIG-.
6262	3250	FLD+FWD+FAINC-.
6263	5213	FSR+FWD+FAINT-.
6264	2212	FST+FWD+FAINT-.
6265	3211	FLD+FWD+FAINT-.
6266	0000	PEXIT
6267	1272	TAD FATNSX
6270	3-24	DCX ACS.
6271	5000	JMP I ATN
6272	0000	FATNSX, 0
6273	0000	FATNAX, 0;0
6274	0000	
6275	0000	
6276	0000	FATNT, 0;0;0
6277	0000	
6278	0000	

6301	0200	FATNTT, 0;0;0
6302	0210	
6303	0210	
6304	1634	FATNC1, 1634;0000;0000
6305	0000	
6306	0000	
6307	2007	FATNC2, 2007;7776;0000
6310	7770	
6311	0000	
6312	1774	FATNC3, 1774;2230;2427
6313	2230	
6314	2427	
6315	2016	FATNC4, 2016;7331;7272
6316	7331	
6317	7272	
6320	2004	FATNC5, 2004;1405;2216
6321	1416	
6322	2216	
6323	1750	FATNC6, 1750;0462;4562
6324	0462	
6325	4562	
6326	5764	FATNC7, 5764;4221;3433
6327	4221	
6330	3433	
6331	1760	FATNC8, 1760;3141;6672
6332	3141	
6333	6672	
6334	5775	FATNC9, 5775;2525;2337
6335	2525	
6336	2337	
6337	0000	FATNC, 0;0;0
6340	0000	
6341	0000	
6342	2016	FATNCH, 2016;2207;7326
6343	2207	
6344	7326	
6345	6034	FATNCJ, 6034;0000;0000
6346	0000	
6347	0000	

	TAB00,	TAD CIA TAD	COLUMN TABDES	/GET WHERE WE ARE NOW. /COMPARE AGAINST WHERE WE WANT TO BE /DO WE HAVE TO BACK UP? /NOPE.
6350	1120			
6351	7241			
6352	1367			
6353	7740	SMA SZA CLA		
6354	5360	JMP TABOK		

/EASIC.L8E

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```
6355 1007 TAD 0215 /YEP. GIVE C.R.
6356 4433 JMS I PPUTCH /SEND IT
6357 4433 JMS I PPUTCH /ALSO SEND A NULL CHARACTER TO ALL T
TY TO RETURN.
6360 1126 TABOK, TAD COLUMN /GET WHERE WE ARE.
6361 7040 CMA /NEGATE-1
6362 1357 TAD TABDES /WHERE DO WE WANT TO BE?
6363 7750 SNA SPA CLA /?
6364 5770 JNP I TPRINT /HERE. EXIT.
6365 1051 TAD 0240 /FARTHER UP.
6366 5357 JMP TABOK-1 /GIVE SPACE AND LOOP AGAIN.
```

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6367 0000 TABDES, 0 /NORMAL EXIT LOCATION.
6370 2237 TPRINT, PRINTC
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6400 0000 CHKFIT, 0
6401 1150 TAD 04
6402 4544 JMS I SPLEFT
6403 5520 JMP I CHKFIT
6404 4551 JMS I PLINFIX
6405 4537 JMS I PRESET /RESET ALL I/O DEVICES.
6406 4512 JMS I PPRINTXT
6407 3552 UGH1
6408 3054 DCA /RESET THIS FLAG NOW
6409 5512 JMP I .+1
6410 2010 NEWLIN /THIS MAY BE RIGHT.
```


6413 2040 RMLEFT, 0
6414 7102 CLL
6415 1233 TAD ARRLOC
6416 7432 SZL
6417 5223 JMP NORLFT
6420 7341 CIA
6421 1334 TAD CODELOC
6422 7022 SML CLA
6423 2213 NORLFT, ISZ RMLEFT
6424 5613 JMP I RMLEFT

6425 0100 ABS, 0
6426 3024 DCA ACS
6427 5625 JMP I ABS

6430 0100 STICKIT, 0
6431 3423 DCA I ARRLOC
6432 2133 ISZ ARRLOC
6433 5632 JMP I STICKIT

6434 0320 INT, 0
6435 4516 JMS I PFI
6436 7210 CLA
6437 4546 JMS I PANORM
6442 5634 JMP I INT

6441 0320 SXERR, 0
6442 7210 CLA
6443 3241 DCA SXERR
6444 4477 JMS I PERROR
6445 2331 TEXT 'SYNTAX'
6446 1624
6447 0130
6448 0000
6451 4401 ATLINE, TEXT ' AT LINE '
6452 2440

/INCSA THIS IS JMS'D TO.

/AND REMAKE INTO AN "AND"

6463 1411
6464 1506
6465 4430

6466 7577 07570, 7570 ACS
6467 1024 UPARROW, TAD SMA CLA
6468 7730 TAD SMA CLA 07570
6469 1256 TAD TAD ACE
6470 1025 TAD ACE
6471 7742 SMA CLA
6472 5447 JMP I PARGERR
6473 4506 JMS I PFIX
6474 5057 JMP I +1
6475 4365 UPARR2

6476 4570 MOREDIM, MUSTRE /, '
6477 3763 3763
6478 7247 DIM, CLA CMA
6479 3334 DCA DIMFLAG
6480 4531 JMS I PEVAL
6481 4560 ISIT / (CR) OR '0'
6482 2000
6483 5270 JMP MOREDIM
6484 5503 JMP I PEXECUTE/YES

6501 4004 DELETED, TEXT ' DELETED0'
6502 0514
6503 0524
6504 0514
6505 3720

6506 1250 ANATCH, TAD WORD
6507 3164 DCA SNUMFLG
6508 1364 TAD SNUMFLG
6509 3457 DCA I FPTR

/BASIC.LAB

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6512	2437	ISZ	FPTR
6513	1060	IAD	GPTR
6514	3756	DCA	EPTR
6515	4566	ISIT	/'REM'
6516	1762	JMP I	PSLOOP
6517	5316	JMP I	.+1
6522	5721	REMPACK	
6521	3043		

6522	3723	BREAK,	3723:2417:2056
6523	2417		
6524	2056		
6525	3722	READY,	TEXT 'READY.00'
6526	2571		
6527	0431		
6532	5637		
6531	3720	CRLF=-1	

6532	0030	ISDIG,	0
6533	4522	JMS I	PNONBLNK
6534	1344	IAD	07706A
6535	7100	CLL	
6536	1065	IAD	012
6537	7422	SNL	
6540	7210	CLA	
6541	7430	SZU	
6542	2332	ISZ	ISDIG
6543	5732	JMP I	ISDIG
6544	7726	07706A,	7726

6545	1142	PZERDON,IAD	PRIEMP
------	------	-------------	--------

/EASIC.LBF

6546	1043	TAD	DECEXP
6547	7710	SPA	CLA
6550	5354	JMP	.*4
6551	1043	TAD	DECEXP
6552	7042	CMA	
6553	3242	DCA	PRTEMP
6554	1044	TAD	PNUMBUF
6555	3225	DCA	ACE
6556	7344	CLA	CLL CMA RAL
6557	7344	DIGLUP, CMA	
6560	1043	TAD	DECEXP
6561	7442	SZ	
6562	5355	JMP	.*3
6563	1375	TAD	0256B
6564	4433	JMS	I PPUTCH
6565	3143	DCA	DECEXP
6566	1425	TAD	I ACE
6567	4433	JMS	I PPUTCH
6570	2425	ISZ	ACE
6571	2442	ISZ	PRTEMP
6572	5357	JMP	DIGLUP
6573	5774	JMP	I .+1
6574	5123	FMTENF	

/..... 8 K INSERT RETURN.

6575 0256 0256B, 256

LSF=6661
LCF=6662
LLS=6666

/SAVE ALL IMPORTANT STUFF ON INTERUP

INTER, DCA INTAC

6660 3334

RAR

6661 7310

DCA

6662 3335

RIB

6663 6234

AND

6664 8374

TAD

6665 1375

DCA

6666 3371

PIR

6667 6234

AND

6668 8372

CLL

6669 7136

RAL

6670 7344

TAD

6671 1215

DCA

6672 3372

CDF

6673 6231

IFZERO

6674 4540

MACHINE<

6675 3372

NOP

6676 3372

>

IFNZRO

6677 3372

MACHINE<

6678 3372

JMS I

6679 3372

SPECINT

6680 3372

>

6681 3372

JMS

6682 3372

JMP

6683 3372

JMS

6684 3372

JMP

6685 3372

JMS

6686 3372

JMP

6687 3372

JMS

6688 3372

JMP

6689 3372

JMS

6690 3372

JMP

6691 3372

JMS

6692 3372

JMP

6693 3372

JMS

6694 3372

JMP

6695 3372

JMS

6696 3372

JMP

6697 3372

JMS

6698 3372

JMP

6699 3372

/CHECK FOR SPECIAL INTERRUPT DEVICE.

/IS IT THE TELEPRINTER.

/NO

/YEP. CLEAN IT UP. 4

/PRINTER?

/YEP.

/PUNCH?

/READER?

/NOPE.

/4000 TO AC

/READ IN THE CHARACTER.

printer interrupt


```

6640 5344 JMP /EXIT FROM THE INTERRUPT.
6641 5553 INOPPP, 6663 /LINE PRINTER ERROR?
6642 5245 JMP /NOPE.
6643 5557 6667 /YEP. IGNORE THE LINE PRINTER NOW.
6644 5344 JMP /AND EXIT.

6645 6031 INOTT, KSF /IS IT THE KEYBOARD.
6646 7412 HLT /NOPE. A BADDY. WE'RE F--KED.
6647 6336 KRB /READ IN THE CHARACTER.
6648 7127 AND /CHOP OFF THE CRAP.
6651 3336 -DCA /SAVE IN THE INTERRUPT TEMPORARY.
6652 1336 TAD /RECALL IT NOW, BUBBY.
6653 1376 TAD /IS IT A C
6654 7452 SNA /?
6655 5255 X JMP /YES!
6656 1377 TAD /NO?
6657 7652 SNA CLA
6658 5303 JMP FCNTLO
6659 7336 CLA CLL CML RAR
6662 1336 TAD INTMP
6663 3741 DCA I PINCHAR
6664 5344 JMP INTXT *

6665 1134 FCNTLC, TAD NOINT
6666 7642 SZA CLA
6667 5300 JMP CNTLCF
6670 6282 CNTLCR, IOF
6671 4542 JMS I DELOUT
6672 4537 JMS I PRESET
6673 4514 JMS I PPRINTXT
6674 6522 BREAK
6675 1125 OVER MY SHOULDER WHILE I TYPE.
6676 3236 TAD PPDLIST
6677 5520 DCA PDL
JMP I PEDIT

6700 7140 CNTLCF, CMA
6701 3134 DCA
6702 5344 JMP NGINT
INTXT

6703 4542 FCNTLO, JMS I DELOUT
6704 1133 TAD CNTLO
6705 7244 CMA
6706 3133 DCA
6707 5344 JMP INTXT
CNTLO

6710 3742 INODUN, DCA I POFLAG
6711 4743 JMS I POUTIT
6712 5344 JMP INTXT

```

Keyboard interrupted

/THE IDLE ROUTINE

6713 0000 B10LE, 0
6714 6302 IOF

6715	7241	CLA	IAC	RUSY	/RESET THE IDLE TASK FLAG.
6716	3337	DCA			/SAVE THE DATA FIELD NOW.
6717	6214	RDF			
6720	1215	TAD	06201A		/AND PLACE IN WHERE TO GO ON IDLE EX
6721	3362	DCA	INTECDF		
11.					
6722	1331	TAD	IDLEK		/RESTORE THE IDLE ROUTINES PARAMETER
S.					
6723	7134	CLL	RAL		
6724	1332	TAD	IDLEAC		
6725	6211	IDLECD, CDF	13		
6726	6212	IDLECI, CIF	0		/AND DO THE IDLE STUFF
6727	6401	ION			
6730	5733	JNP	I	IDLEPC	
6731	0340	IDLEK, 0			
6732	0300	IDLEAC, 0			
6733	7556	IDLEPC, NULJOB			
6734	0370	INTAC, 0			
6735	9120	INTL, 0			
6736	0020	INTEMP, 0			
6737	0100	BUSY, 0			
6740	7255	PRCHAR, HRCHAR			/GET STATUS.
6741	7255	PINCHAR, INCHAR			/WE WERE NOT IDLE. EXIT NOW.
6742	7100	POFLAG, OFLAG			/RESET BUSY FLAG.
6743	7343	POUITT, OUTIT			
6744	1337	INTEXT, TAD	CLA	BUSY	
6745	7650	JMP	INTOU		
6746	5305	DCA	BUSY		
6747	3337	TAD	0		
6750	1030	DCA	IDLEPC		/SAVE SH-T.
6751	3333	TAD	INTAC		
6752	1334	DCA	IDLEAC		
6753	3332	TAD	INTL		
6754	1335	DCA	IDLEK		
6755	3331	TAD	INTCIF		
6756	1371	DCA	IDLECI		
6757	3326	TAD	INTCDF		/IDLE ROUTINES CALLING CDF.
6760	1370	DCA	IDLECDF		
6761	3325	ION			/AND GO BACK NOW.
6762	7422	JMP	I	BIDLE	
6763	6401				
6764	5713				
6765	1335	INTOU,	TAD	INTL	
6766	7104	CLL	RAL	INTAC	
6767	1334	TAD			
6770	7422	INTCDF, HLT			
6771	7422	INTCIF, HLT			
6772	6401	ION			

6773 5430

JMP I 0

6774 0275 073, 7%
 6775 6202 6202
 6776 7775 07775, 7775
 6777 7754 077640, 7764

GET

1200 / 11

-D buffer grand geveg.

PAGE

631

7000 0022	PUTER, 0		/THE CHARACTER PUTTER.
7021 3241	DCA		/SAVE THE CHARACTER NOW.
7002 6214	ROP	OPUTC	/READ THE DATA FIELD NOW.
7003 1235	TAD	062018	/CREATE PROPER CDF INSTRUCTION.
7004 3237	DCA	PUTCDF	/SAVE CDF INSTRUCTION.
7005 6231	CDF	0	/RESET CDF TO THIS DATA FIELD.
7006 7410	SKP		
7007 4761	JMS I	PBIDLE	/CALL IN THE IDLE ROUTINE NOW.
7010 1242	TAD	OCOUNT	/GET NUMBER OF CHARACTERS IN THE BUF
7011 7450	SNA		
7012 5223	JMP	PUTCIN	/PUT IT IN NOW, BABY.
7013 1315	TAD	OCMLIM	/TEST FOR TOO MANY IN BUFFER.
7014 7650	SNA CLA		
7015 5217	JMP	PUTLP	/YEP. WAIT. AWHILE.
7016 1131	TAD	OUTDEV	
7017 7441	CIA		


```

7020 1132 TAD ODEV /CHECK FOR A MATCH.
7021 7640 SZA CLA /NOPE. WAIT FOR BUFFER TO BECOME EMT
7022 5217 JMP PUTLP
PY.

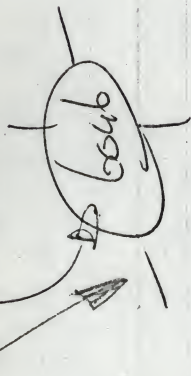
7023 5332 PUTCN, IOF /TURN THEM OFF, BABY.
7024 1133 TAD /CHECK FOR CONTROL "0" ACTIVE.
7025 7650 SNA CLA /MOVE OVER OUTPUT DEVICE.
7026 1131 TAD
7027 3132 DCA OUTDEV
7028 2242 ISZ OCOUNT
7029 1241 TAD OPUTC /STICK A CHARACTER IN THE BUFFER.
7030 3634 DCA I IPOINT /BOP UP THE POINTER NOW.
7031 4331 JMS OROP
7032 4243 JMS OUIT /SEND IT OUT
7033 6041 ION /RESTORE INTERRUPTS.
7034 7432 PUTCDF, HLT /USER'S CORRECT CDF
7035 5630 JMP I PUTER

7041 2032 OPUTC, 0
7042 3032 OCOUNT, 0

7043 2030 OUIT, 0
7044 1330 TAD OFLAG
7045 7640 SZA CLA /FLAG- STILL UP. EXIT.
7046 5643 JMP I OUIT
7047 1242 TAD OCOUNT
7048 7452 SNA /NO CHARS. TO GO. SO WE WILL.
7049 5643 JMP I /PLEASE IGNORE THE COMMENTS OF A DER
7050 1314 TAD
7051 3242 DCA OCOUNT
7052 1132 TAD ODEV
7053 1273 TAD OPOTAB /MAP DEVICE INTO LABEL TOO ET WHAT T
7054 3320 DCA OFLAG /AND ALSO RESET FLAG AT THE SAME TIM
7055 1720 TAD I OFLAG /GET THE MAGIC INSTRUCTION.
7056 3262 DCA +2 /AND PLACE IT HERE.
7057 1665 TAD I OPOINT /GET THE CHARACTER.
7058 7432 HLT /AND HALT.
7059 7232 CLA /AFTER PRINTING THE CHARACTER,
7060 4301 JMS OROP /WE SHALL INCREMENT THE POINTER.
7061 1165 OPOINT, OBLow
7062 5643 JMP I OUIT /AND EXIT.

7067 7220 OPNUL, CLA /RESET OFLAG
7068 3302 DCA /SO DEVICES INACTIVE.
7069 4542 JMS I DELOUT /DELETE ANY STRAY CHARACTERS IN THE
7070 5643 BUFFER, /AND RETURN NOW.
7071 7474 OPOTAB, +1 /NUL DEVICE (NO ECHOING)
7072 5267 JMP TLS
7073 5045 PLS
7074 6025

```

7100 0000 0FLAG, 0

7101 0000 0BOP, 0
 7102 17A1 TAD I 0BOP
 7103 1312 TAD 0TS11
 7104 7450 SNA
 7105 1315 TAD 0FLOW
 7106 1313 TAD 0COR
 7107 3731 DCA I 0BOP
 7108 2301 ISZ 0BOP
 7109 5701 JMP I 0BOP

7112 6601 0TS11, -0BHIGH
 7113 1200 0COR, 0BHIGH+1

7114 7777 07777, 7777

7115 7765 0FLOW, -0BHIGH-1+0BLOW
 0CMLIM=0FLOW

7116 0000 RESET1, 0
 7117 7201 CLA IAC OUTDEV
 7118 3131 DCA IAC
 7119 7201 CLA IAC OUTD2
 7120 3130 DCA IAC
 7121 7201 CLA IAC
 7122 3127 DCA INDEV
 7123 3133 DCA CMTLO
 7124 3134 DCA NOINT
 7125 6201 CDF 0
 7126 3756 DCA I QHRCCHAR
 7127 3762 DCA I SINCHAR
 7128 3757 DCA I PRUSY
 7129 3750 DCA I PPXRA

/CLEAR NO-INTERUPT FLAG.
 /RESET DATA FIELD TO HERE.
 /CLEAR ALL INPUT FLAGS.

/AND ALSO THE RUSY FLAG.
 /RESET NULL AFTER C.R. FLAG.

7134 6213 IFNZRO MACHINE<
 7135 4740 CIF CDF 10
 ER). JMS I LLLUUU
 >

/PREPARE TO RESET CLOCK.

/RESET CLOCK NOW (OR RATHER A-D BUFF

IFZERO MACHINE<
 CDF 10
 ION >

7136 6665 6665
 7137 5716 JMP I RESET1
 /TELL LPT IT'S OK TO INTERRUPT NOW.

/POINTER TO UPPER CORE RESETTER.

7140 0352 LLLUUU, UUULLL

7141 7000 RESET2, 0
7142 4537 JMS I PRESET
7143 4542 JMS I DELOUT
7144 3300 DCA OFLAG
7145 5741 JMP I RESET2

7146 0000 OUTDEL, 0
7147 3242 DCA OCOUNT
7148 1355 TAD OPRST
7149 3265 DCA OPOINT
7150 1355 TAD OPRST
7151 3234 DCA IPOINT
7152 5746 JMP I OUTDEL

7153 1155 OPRST, OBLW
7154 7256 OPRCHAR, HRCCHAR
7155 6737 PRUSY, BUSY
7156 2725 PRXRA, PUTXRA
7157 6713 PRIDLE, BIDLE
7158 7255 SINCHAR, INCHAR

7756

7163 7211 LPTOUT, CLA IAC
7164 7001 PIPOUT, IAC
7165 7001 TTYOUT, IAC
7166 3131 OUTDEV
7167 1131 OUTDEV

/LINE PRINTER OUTPUT
/PUNCH OUT
/TTY OUT
/AND SET IT UP
/ALSO MOVE OVER TO SECONDARY DEVICE.

7170 3132 OUTD2
7171 5375 DEVCOM

/AND CHECK FOR END.

	7172	7201	PTRIN,	CLA	IAC
	7173 <td>7031 <th>TTYIN,</th> <th>IAC</th> <th></th> </td>	7031 <th>TTYIN,</th> <th>IAC</th> <th></th>	TTYIN,	IAC	
	7174 <td>3127 <td></td> <td>DCI</td> <td></td> </td>	3127 <td></td> <td>DCI</td> <td></td>		DCI	
	7175 <td>4177 <td>DEVCOM, <td>JMS</td> <td></td> </td></td>	4177 <td>DEVCOM, <td>JMS</td> <td></td> </td>	DEVCOM, <td>JMS</td> <td></td>	JMS	
	7176 <td>4570 <td>DEVCON, <td>MUSTBE</td> <td></td> </td></td>	4570 <td>DEVCON, <td>MUSTBE</td> <td></td> </td>	DEVCON, <td>MUSTBE</td> <td></td>	MUSTBE	
	7177 <td>2000 <td></td> <td>2000 <td></td> </td></td>	2000 <td></td> <td>2000 <td></td> </td>		2000 <td></td>	
	7200 <td>5503 <td></td> <td>JMP I</td> <td></td> </td>	5503 <td></td> <td>JMP I</td> <td></td>		JMP I	

[illegible]

7223	5631	JMP I	GETCH
7224	1254	TAD	GTEMP
7225	1255	TAD	07770
7226	7450	SNA	
7227	5222	JMP	GRDELA
7230	1252	TAD	07612
7231	7451	SNA	
7232	5247	JMP	GALT
7233	1266	TAD	0143
7234	7650	SNA	CLA
7235	5247	JMP	GALT
7236	1254	TAD	GTEMP
7237	1263	TAD	07640C
7240	7510	SPA	
7241	5251	JMP	GOUT
7242	1254	TAD	07746
7243	7500	SMA	
7244	5251	JMP	GOUT
7245	1255	TAD	0132
7246	5631	JMP I	GETCH
7247	1267	GALT,	0175
7250	5631	JMP I	GETCH
7251	7200	CLA	
7252	1254	TAD	GTEMP
7253	5631	JMP I	GETCH
7254	2030	GTEMP,	0
7255	2040	INCHAR,	0
7256	0070	HRCHAR,	0
7257	6713	QBIDLE,	BIDLE
7260	7601	07601,	7601
7261	2137	0137,	137
7262	7612	07612,	7612
7263	7640	07640C,	7640
7264	7746	07746,	7746
7265	0132	0132,	132
7266	0143	0143,	143
7267	0175	0175,	175
7270	2310	GNHERE,	0
7271	7240	CLA	CMA
7272	1127	TAD	INDEV
7273	2270	ISZ	GNHERE
7274	7750	SPA	SNA
7275	5670	JMP I	GNHERE

/INPUT=TIY

367.01342/

START THE READER NOW.

/GOT IT.

/RESET OUTPUT DEVICE FOR A SECOND.
/RESET THE CONTROL "O" SWITCH ALSO.
/GIVE THE MESSAGE.

OTHERS ROUTINE WAITS FOR OUTPUT TO ST

```

/SET D.F. TO THIS FIELD.      C.R. FLAG.
/SET OR RESET NULL AFTER
/GET OUTPUT FLAG STATUS.

```

```

/RESET D.F.
/IS OUTPUT DONE?
/YES. EXIT.
/NOPE. IDLE LOOP TILL INTERRUPT.
/RESET D.F. TO ZERO.
/AND LOOP.
/CLEAR CONTROL 0 STATE.

```

7342	0776	CCXRA,	PUTXRA
7343	7132	CONTFP,	CFLAG
7344	6713	CONTR,	BIDLE

7345	2332	XGMUST, 0		
7346	4177	JMS	GETWD	
7347	1345	TAD	XGMUST	
7350	3352	DCA	XMUST	
7351	5353	JMP	XMUST+1	
7352	2142	0		
7353	1450	TAD I	WORD	
7354	6241	CDF	0	
7355	1752	TAD I	XMUST	
7356	6211	CDF	10	
7357	2352	ISZ	XMUST	
7362	7652	SNA CLA		
7361	5752	JMP I	XMUST	
7362	5520	JMP I	PSXERR	

/XXXXXXXX 8 K INSERT.

/XXXXXXXX 8 K INSERT.

7363	4477	ARGERR, JMS I	PERRR	
7364	2122	TEXT	'ARGUMENT'	
7365	2725			
7366	1535			
7367	1624			
7372	0300			
7371	5560	DOTZERO,TEXT	'0'	

/BASIC.L5E

PAL8

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7372 0J30

7373 4477 RTERR, JMS I PERRR /GIVE RATE ERROR FOR CLOCK.
7374 2211 TEXT 'RATE'
7375 2415
7376 0J30

PAGE

IFZERO MACHINE<
NOPUNCH>

7470 1130 PLOT, TAD DISS /GET BUFFER ADDRESS.
7471 7640 SZA CLA /IS THERE ONE?
7472 5220 JMP DBGOT
7473 1242 TAD PASSUME /GET ASSUMED LENGTH.
7474 4544 JMS I SPLEFT /ROOM LEFT TO FIT IT IN.
7475 7410 SKP

/BASIC,LAE

```

7406 5755 JMP I NPSERR /NO.
7407 1003 TAD ARRLOC /GET A USABLE ADDRESS.
7410 3311 DCA DLAST /SAVE AWAY.
7411 1003 TAD ARRLOC /NOW UPDATE OUR ARRAY.
7412 1242 TAD PASSUME
7413 3003 DCA ARRLOC
7414 7240 CLA CMA
7415 1003 TAD ARRLOC /GET LAST WORD OF OUR BUFFER NOW.
7416 3312 DCA DDLAST /AND GO.
7417 4314 JMS PLOTB /FIGURE OUT OUR CRAP NOW.

7420 3313 DCA DRAD /TELL IT POINT IS ON SCREEN
7421 4177 JMS GETWD /GET NEXT SYNTACTICAL ELEMENT.
7422 4641 JMS I PREVAL /EVALUATE OUR EXPRESSION.
7423 4435 FENTER
7424 6217 FMP+FSHIFT+FWD-. /CORRECT NUMBER FOR SYMETRICAL SCREE

N.
7425 0000 FEXIT
7426 4326 JMS I DBLIT /PUT IT IN THE BUFFER.
7427 4641 JMS I PREVAL /GET Y COORDINATE.
7428 4326 JMS DBLIT /PUT IT IN THE BUFFER.
7431 1313 TAD DSAD /IS IT A BAD ONE? <OFF SCREEN?>
7432 7041 CIA
7433 1311 TAD DIMP
7434 3311 DCA DIMP
7435 7330 CLA CLL CML RAR /4000=END OF BUFFER CHARACTER.
7436 3/11 DCA I DIMP
7437 5542 JMP I PDEVCON

7440 1750 PASSUME,1750
7441 7616 PREVAL, NEVAL
7442 7176 PDEVCON, DEVCON
7443 2007 FSHIFT, 2007;1600;0000
N.
7444 1640
7445 2300

7446 1136 USE, TAD DISB /IS DISPLAY BUFFER ASSIGNED.
7447 7640 SZA CLA
7448 5661 JMP I USKIPIT /YES. EXIT.
7449 4262 JMS GETARY /GET THE ARRAY DATA
7450 1020 TAD AC1 /GET FIRST FREE LOCATION
7451 3311 DCA DLAST
7452 1017 TAD AC2 /GET SECOND FREE LOCATION
7453 3312 DCA DDLAST /SAVE AWAY.
7454 4314 JMS PLOTB /SET UP STUFF.
7455 4177 JMS GETWD /GET NEXT ELIMNAENT AFTER VARIABLE.
7456 5642 JMP I PDEVCON
7457 2457 USKIPIT,SKIPIT

```

7462 0000 GETARY, N /THIS ROUTINE GETS THE FIRST AND LAS
 7463 4571 Y LOCATIONS OF AN ARRAY. /MUST BE A VARIABLE.
 GET+MUSTBE


```

7454 7030 7000 WORD /GET POINTER TO VARIABLE.
7455 1050 TAD UVP
7456 3302 DCA UVP
7457 2250 TSZ WORD
7458 1450 TAD I WORD /GET POINTER NOW.
7459 7111 IAC
7460 3220 DCA AC1 /SAVE AWAY.
7461 2050 ISZ WORD
7462 1450 TAD I WORD
7463 3303 DCA U1P
7464 2050 ISZ WORD
7465 1450 TAD I WORD
7466 3314 DCA U2P
7467 4522 JMS I PGETADD
7468 2000 UVP,
7469 0000 U1P,
7470 2232 U2P,
7471 7326 CLA CLL CML RTL /+2
7472 1697 TAD ADDRESS
7473 3317 DCA AC2
7474 5562 JMP I GETARY
7475 0000 DLAST, 0
7476 2000 D1NP=DLAST
7477 2200 DDLAST, 0
7478 2200 DBAD, 0

```

```

7514 2010 PLOTB, 0 CLA CMA
7515 7240 TAD DLAST
7516 1311 TAD DISB
7517 3136 DCA O4001
7518 1325 TAD ODLAST
7519 3712 DCA I CML RAR
7520 7330 CLA CLL DLAST
7521 3711 DCA I PLOTB
7522 5714 JMP I
7523 4371 04001, 4001

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7526	DBLIT,	0	TAD	ACS
7527		SMA	CLA	
7530		JMP		*+4
7531		CLA	CLL	CML RTL
7532	DBRAD,	DCA		DBAD
7533		JMP		DBISRT
7534		TAD		ACE
7535		TAD		075778
7536		SMA	CLA	
7537		JMP		DBRAD
7540		TAD		ACE
7541		TAD		012
7542		DCA		ACE
7543		JMS	I	PFIX
7544		CLA		
7545		TAD		AC3
7546		JMS		DBPUT
7547	DBISRT,	CLA	CLL	CML RAR
7550		ISZ		DINP
7551		JMS		DBPUT
7552		JMP	I	DBLIT
7553				

7554	7577	075778, 7577
7555	2370	NPSPERR, SPACERR

7556	DBPUT,	0	DCA	AC2		
7557		CLA	CLL	CMA	RAR	
7558		TAD	I	DINP		/-4001=3777
7561		SMA	CLA			
7562		JMP	I	NPSPERR		/NO ROOM IN BUFFER. BOMB HIM.
7563		TAD		AC2		
7564		DCA	I	DINP		
7565		JMP	I	DBPUT		
7566						

7567	4477	UUDATA, JMS	I	PERRR
7570	0156	TEXT		'A-D FULL'
7571	2440			
7572	0625			
7573	1414			
7574	0000			

ENPUNCH

IFNZRO MACHINE<
PAGE >IFZERO MACHINE<
*PLOT>

7600	0000	SETUP,	0		PSYMTAB
7601	1005		TAD		EPTR
7602	3050		DCA		NSYMTAB
7603	1010		TAD		FPTR
7604	3057		DCA		DISB
7605	3130		DCA		
7606	5630		JMP I	SETUP	

7607 7175 CDEVCOM,DEVCOM >
IFNZRO MACHINE<IFZERO MACHINE<
CDEVCOM=0 >

7610	0003	ISET,	0
7611	6050	DILC	
7612	6055	DIXY	
7613	4515	JMS I	IIXR
7614	5610	JMP I	ISET
7615	7141	IIXR,	RESET2

IFZERO MACHINE<

NOPUNCH>

7616	0020	MEVAL,	0		
7617	4560	ISIT			/IS IT A C.R.
7620	2000	SKP			
7621	7410	SKP			
7622	5500	JMP I	PSXERR		
7623	4566	ISIT			
7624	3763				/,
7625	5230	JMP			
7626	4177	JMS			
7627	5217	JMP			
7630	1210	TAD			
7631	5532	JMP I	MEVAL		
7632	1027	MEVALGO,	EVALGO		

7633 1136 CLEAR, TAD DISB
 7634 7450 SNA JMP I CDEVCOM
 7635 5627 DCA CML INDEXI
 7636 3013 CLA CML RAR
 7637 7330 DCA I INDEXI
 7640 3413 CDF 0
 7641 6221 TAD INDEXI
 7642 1013 DCA I COINP
 7643 3545 CDF 10
 7644 6211 JMP I CDEVCOM
 7645 5617

/IS IT THERE?
 /NOPE.

/4200

/RESET INPUT POINTER ALSO.

7646 7511 COINP, DINP

7647 0000 LLLJMS, 0
 7652 1647 TAD I LLLJMS
 7651 2247 ISZ LLLJMS
 7652 3250 DCA LLLJMP
 7653 4560 JMS I LLLJMP
 7654 7410 SKP
 7655 2247 ISZ LLLJMS
 7656 6213 CIF CDF 10
 7657 5647 JMP I LLLJMS

/IN CASE OF SKIPPING RETURN.

7660 2400 LLLJMP, 0
 7661 1550 TAD I LLLJMP
 7662 3250 DCA LLLJMP
 7663 5662 JMP I LLLJMP

7664 7326 DELAY, CLA CML RTL /+2
 7665 3356 DCA NDELAY /SET UP DEALY TIME (ONE TIME THROUGH

7666 1136 NULJOB, TAD IFNZRO MACHINE<
 DISB /SET UP AUTO INDEX REGISTER NOW.

Slope

Slope

IFZERO MACHINE<
ENPUNCH
*MEVAL

NULJOB, IAC
JMP NULJOB

NOPUNCH>

7667	3015	DCA	DISAUTO	/WITH POINTER TO OUR BUFFER.
7670	1356	TAD	NDELAY	/UPDATE DELAY WORD.
7671	7110	CLL	RAR	
7672	3356	DCA	NDELAY	
7673	7430	SZL		/ARE WE FINISHED WITH DELAY COMMAND?
7674	5637	JMP	I CODEVCOM	/YEP, EXIT NOW.
7675	1136	TAD	DISB	/GET OUR WORD NOW.
7676	7650	SNA	CLA	/ZERO?
7677	5266	JMP	NULJOB	/YEP, WAIT AWHILE.
7722	1415	NULJOB, TAD	I DISAUTO	
7721	7510	SPA		
7722	5324	JMP	NULCMD	/BRING DOWN INTO RANGE OF SCREEN.
7723	1326	TAD	07000C	
7724	6052	DISD		
7725	5334	JMP		
7726	6053	DILX		
7727	7210	CLA		
7710	1415	TAD	I DISAUTO	
7711	7510	SPA		
7712	5324	JMP	NULCMD	/CENTER AGAIN.
7713	1326	TAD	07000C	
7714	6052	DISD		
7715	5314	JMP		
7716	6054	DILY		
7717	7200	CLA		
7720	6252	DISD		
7721	5324	JMP		
7722	6050	DILY		
7723	5310	JMP	NULJOB	
7724	7230	NULCMD, CLA		
7725	5266	JMP	NULJOB	
7726	7000	07000C, 7000		
7727	6762	NINTEDDF, INTECDF		

stop

7739 4477 UNLOAD, JMS I ERROR
7731 1617 TEXT 'NO A-D'
7732 4431
7733 5824
7734 2808

7739 0000 CCINTK, 0
7736 6131 JMP I CCINTK
7737 5735 CIF CDF 10
7740 6213 JMP I +1
7741 5742 CLOCKI
7742 0175

REALTI=.
SETRAI=.
SETCLO=.
WAITC=.
WAIT=.
REJECT=.
ACCEPT=.
TAD I WORD
CDF CIF 10
JMP I +1
UPCONDO

7743 1450
7744 6213
7745 5740
7746 0731

TIME=.
CLC=.
CLS=.
ADC=.
ADR=.
TAD I PDL
CIF CDF 10

7747 2440
7752 1436
S. ON THE STACK)
7751 6213
/RECALL CORRECT FUNCTION NUMBER (IT)

7752 4754 JMS I .+2
7753 5747 JMP I ADB
7754 0747 UPFUN

ENPUNCH

IFZERO MACHINE<

*NULJOB+2>

7755 3752 TSTFX, BEGFX

7756 0000 NDELAY, 0

7757 2000 TST, 0 JMS I TSTFX
7758 4755 CDF 0
7759 6201 TAD I TSTP
7760 1757 CDF 10
7761 6211 DCA AC3
7762 3016 JMS I PANORM
7763 4546 JMP I TST
7764 5757

7767 7255 TSTP, INCHAR

FIELD 1

*0

/INSERTED IN UPPER CORE BECAUSE OF F

0000 2045 TEN, 2045:0000:0000

REBILITY.

0001 0000

0002 0000

0003	0000	CLKSTS,	0
0004	0000	TIME1,	0
0005	0000	TIME2,	0
0006	0000	ABOGET,	0
0007	0000	ADACPT,	0
0008	0000	ADACPT,	0
0009	0000	CLTEMP,	0
0010	0000	ADCX,	0
0011	0000	U120,	100
0012	0000	U120,	0
0013	0000	U120,	0
0014	0000	U120,	0
0015	0000	U120,	0
0016	0000	U120,	0
0017	0000	U120,	177
0020	4707	U4707,	4707

PAL8

/BASIC.L3E

0021	7775	U775,	7775
0022	0000	ACCOUNT,	0
0023	0000	APUT1,	0
0024	0000	APUT2,	0
0025	0000	ADAI,	0
0026	0000	ADAI,	0
0027	0000	ADAI,	0
0030	0550	USETF,	USETF
0031	0673	USETF,	USETF
0032	0577	UPFIX,	UPFIX
0033	0000	U7,	7
0034	5010	U5010,	5010
0035	7767	U7767,	7767
0036	0010	U10,	10
0037	0554	UAC1,	UAC1
0040	0661	UAC2,	UAC2
0041	0566	UAC3,	UAC3
0042	0020	PPAC1,	AC1
0043	0017	PPAC2,	AC2
0044	0010	PPAC3,	AC3
0045	0020	PPACE,	ACE
0046	0024	PPACS,	ACS
0047	0017	U17,	17
0050	7777	U7777,	7777
0051	0352	U00AD,	DOAD
0052	7760	U7760,	7760
0053	0000	UTEMP,	0
0054	0722	UJMP,	UJMP
0055	0727	UJMS,	UJMS
0056	0705	UDEVCON,	UDEVCON
0057	6000	UGETWD,	6000
0060	4455	JMS I	UJMS
0061	2177	GETWD	GETWD
0062	5457	JMP I	UGETWD
0063	0000	AUTEMP,	0
0064	7767	ADCCOR,	-11

/ABOUT 512 FOR FUDGE.

PAGE

*-3

AD01AD0 in real time

0175 6135 CLOCKI, 6135
 0176 3003 OCA
 0177 2005 ISZ
 0200 5203 JMP
 0201 2004 ISZ
 0202 7000 NOP
 0203 1006 TAD
 0204 7750 SPA SNA CLA
 0205 5234 JMP UIEXT
 0206 1207 TAD ADACPT
 0207 7650 SNA CLA
 0210 5234 JMP UIEXT
 0211 1210 TAD ACCUNT
 0212 3711 DCA CLTEMP
 0213 1012 TAD ADCX
 0214 6531 /6531
 0215 1013 TAD UI00
 EA DONE.
 0216 6536
 0217 4451 UCLOOP, JMS I UD0AD
 0220 4253 JMS APUT
 0221 2011 ISZ CLTEMP
 0222 5217 JMP UCLOOP
 0223 2014 ISZ CT3
 PLFS.
 0224 5234 JMP UIEXT
 0225 2015 ISZ CT2
 0226 5234 JMP UIEXT
 0227 2016 ISZ CT1
 0230 5234 JMP UIEXT
 0231 7240 CLA CMA
 0232 3075 DCA ABDGEI
 0233 3007 DCA ADACPT
 0234 5231 UIEXT, 6031
 0235 5243 JMP UIEXT2
 /CLEAR CLOCK FLAG.
 /AND SAVE STATUS.
 /INCREMENT CLOCK.
 /IS REAL TIME OPTION RUNNING?
 /NOPE.
 /IT SO, ARE WE NOW ACCEPTING DATA?
 /NOPE.
 /NOPE.
 /YEP. GET NUMBER OF CHANNELS TO DO.
 /SET UP OUR COUNTER.
 /GET STARTING CHANNEL NUMBER.
 /SEND TO TO CONTROLLER.
 /TELL IF TO INCREMENT MULTIPLEXOR WH
 /PREFORM A-D INSTRUCTION.
 /STORE IN USERS BUFFER.
 /ALL DONE?
 /NOPE. WAIT.
 /DONE. INCREMENT TOTAL NUMBER OF SAM
 /ALL DONE. STOP SAMPLING.
 /AND GO INTO "REJECT" MODE.
 /HAS HE TYPED A CONTROL C?
 /NO.

6534

1

2

3

4


```
0236 6034
0237 0017
0242 1021          /AC?
0241 7650          /YES! BOMB HIM.
0242 5245          /YES! BOMB HIM.

0243 6131          /CLOCK HAS NOT COME UP AGAIN. ALL IS
0244 5250          /CLOCK HAS NOT COME UP AGAIN. ALL IS
0245 1320          /STOP CLOCK IMMEDIATELY.
0246 6132
0247 6135
0250 6130
0251 7242          /CLEAR ALL AFTER PARTIAL ENABLE.
0252 6130          /CLEAR TTY FLAG.
0253 6032          /FREE BUFFER AND ACCEPT MODE.
0254 3006          /CLEAR ALL AFTER PARTIAL ENABLE.
0255 3007          /CLEAR TTY FLAG.
0256 4454          /FREE BUFFER AND ACCEPT MODE.
0257 7373          /FREE BUFFER AND ACCEPT MODE.

0260 6203          /CLEAR ALL AFTER PARTIAL ENABLE.
0261 5562          /CLEAR TTY FLAG.
0262 6744          /FREE BUFFER AND ACCEPT MODE.

0263 0000          /CLEAR ALL AFTER PARTIAL ENABLE.
0264 3423          /CLEAR TTY FLAG.
0265 2322          /FREE BUFFER AND ACCEPT MODE.
0266 4326          /FREE BUFFER AND ACCEPT MODE.
0267 0023          /FREE BUFFER AND ACCEPT MODE.
0268 1023          /FREE BUFFER AND ACCEPT MODE.
0269 7041          /FREE BUFFER AND ACCEPT MODE.
0270 1024          /FREE BUFFER AND ACCEPT MODE.
0271 7041          /FREE BUFFER AND ACCEPT MODE.
0272 1024          /FREE BUFFER AND ACCEPT MODE.
0273 7041          /FREE BUFFER AND ACCEPT MODE.
0274 5563          /FREE BUFFER AND ACCEPT MODE.
0275 3006          /FREE BUFFER AND ACCEPT MODE.
0276 3007          /FREE BUFFER AND ACCEPT MODE.
0277 4454          /FREE BUFFER AND ACCEPT MODE.
0278 7567          /FREE BUFFER AND ACCEPT MODE.

0301 0000          /FREE BUFFER AND ACCEPT MODE.
0302 7242          /FREE BUFFER AND ACCEPT MODE.
0303 1022          /FREE BUFFER AND ACCEPT MODE.
0304 7567          /FREE BUFFER AND ACCEPT MODE.
0305 5312          /FREE BUFFER AND ACCEPT MODE.
0306 7242          /FREE BUFFER AND ACCEPT MODE.
0307 4455          /FREE BUFFER AND ACCEPT MODE.
0308 6713          /FREE BUFFER AND ACCEPT MODE.
0309 5302          /FREE BUFFER AND ACCEPT MODE.
0310 3022          /FREE BUFFER AND ACCEPT MODE.

0311 0000          /FREE BUFFER AND ACCEPT MODE.
0312 7242          /FREE BUFFER AND ACCEPT MODE.
0313 1022          /FREE BUFFER AND ACCEPT MODE.
0314 7567          /FREE BUFFER AND ACCEPT MODE.
0315 5312          /FREE BUFFER AND ACCEPT MODE.
0316 7242          /FREE BUFFER AND ACCEPT MODE.
0317 4455          /FREE BUFFER AND ACCEPT MODE.
0318 6713          /FREE BUFFER AND ACCEPT MODE.
0319 5302          /FREE BUFFER AND ACCEPT MODE.
0320 3022          /FREE BUFFER AND ACCEPT MODE.
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0313 1424      TAD I      APUT2      /GET THE SAMPLE.
0314 3323      DCA        ATEMP      /SAVE WHILE UPDATE TAKES PLACE.
0315 6032      IOP        ABOP
0316 4325      JMS        APUT2
0317 0024      ION
0322 6021      TAD        ATEMP
ENTIRELY.
0321 1323      JMP I      AGET
0322 5741
0323 0000      ATEMP, 0
0324 0000      ATEMP2, 0

0325 0000      ABOP, 0
0326 1725      TAD I      ABOP
0327 3324      DCA        ATEMP2
0330 1724      TAD I      ATEMP2
0331 2325      ISZ        ABOP
0332 1325      TAD        ADA1
0333 7450      SNA
0334 1025      TAD        ADA2
0335 1027      ADA3
0336 3724      DCA I      ATEMP2
0337 5725      JMP I      ABOP

0340 0000      UCLS, 0
PT.
0341 1003      TAD        CLKSTS
0342 4430      JMS I      UUSETF
0343 0000      0
0344 5740      JMP I      UCLS

0345 0000      UCLC, 0
0346 6137      6137
0347 4430      JMS I      UUSETF
0350 0000      0
0351 5745      JMP I      UCLC

```

/ABOP WILL F--K YOU UP IF CALLED RE-

/SAVE POINTER NOW.

/GET VALUE AND SKIP PAST POINTER #1.

/TEST AGAINST UPPER.

/CORRECT TO LOWER.

/AND ADD IN UPPER.

/AND THEN SAVE AWAY.

/AND THEN EXIT.

/GETS STATUS AFTER LAST CLOCK INTERU

/RETURN WHEN DONE.

/READS IN AS A CLCA

/GET COUNT REGISTER.

/FIX IT UP.

/AND RETURN NOW.

0352 0030 UUULLL, 0
 0353 7200 CLA
 0354 3022 DCA
 0355 3026 ARDGET
 0356 3007 DCA
 0357 6001 IDN
 0358 6002 CIF
 0359 6002 JMP I
 0361 5752 UUULLL

0362 0002 D0AD, 0
 0363 1452 TAD
 0364 3375 DCA
 0365 6532 * *
 0366 6534 D0ADLP, 6534
 0367 7410 .SKP
 0370 5373 JMP
 0371 2375 .1S2
 0372 5366 DMP
 0373 6533 6533
 0374 5762 JMP I D0AD
 0375 0000 DSCREW, 0

/PLENTRY OF DELAY
 /SAVE IN A COUNTER WORD.
 /START CONVERSION.
 /WAIT UNTIL DONE.
 /IF NOT DONE, WAIT SOME.
 /IF DONE, READ IT IN.
 /WAIT UNTIL DONE OR TOO LONG.
 /THEN, READ IN THE CONVERTED NUMBER.
 /AND RETURN.

start of A/D

conversion

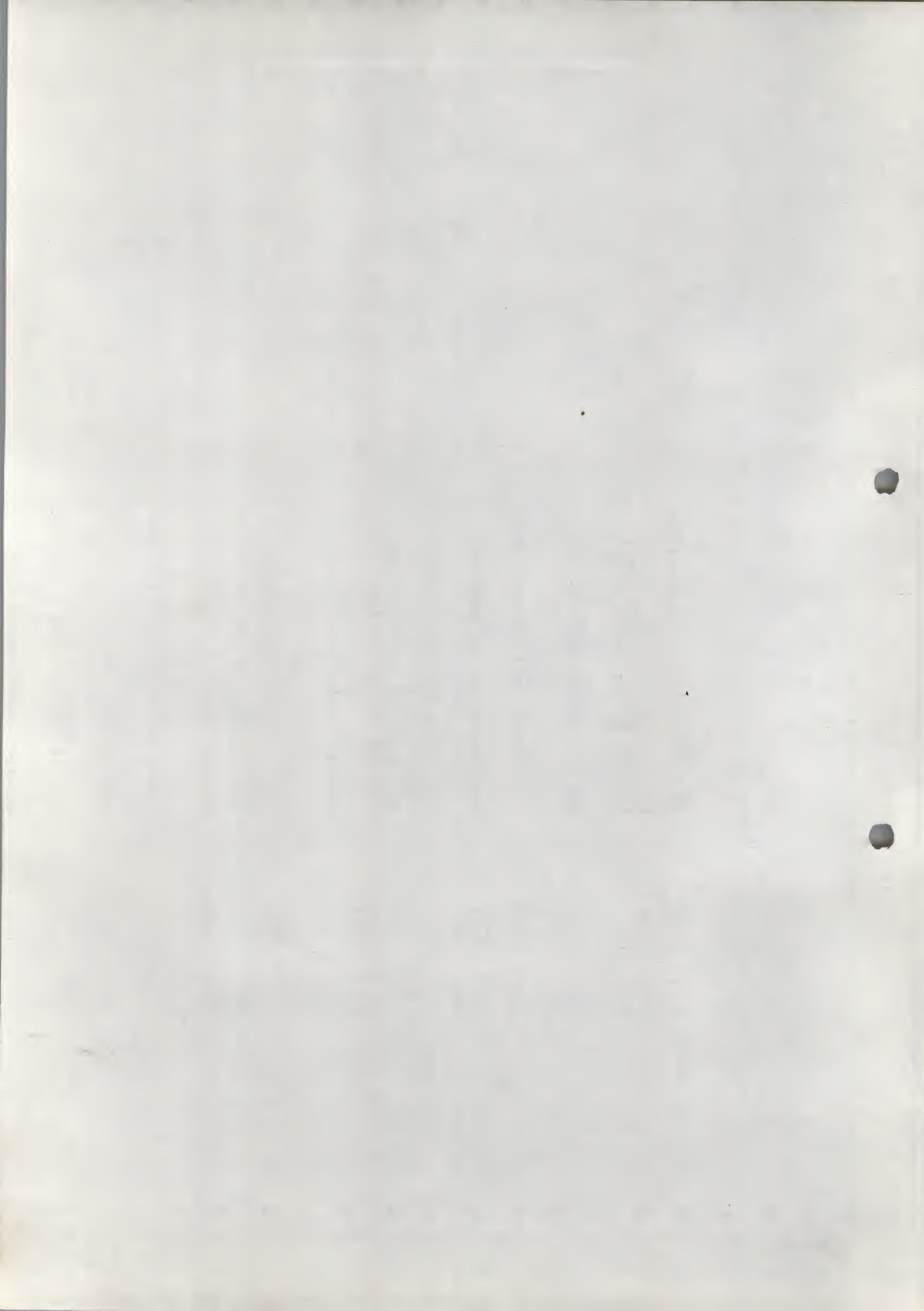
Field 1

* = instruction based for AD8 interface


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0400 4057  USEIR,  JMS  I  UGETND  /BOP PAST CHAR.
0401 4431  JMS  I  UMEVAL  /THIS ROUTINE SETS UP CLOCK TO A GIV
EN TIME.
0402 4432  JMS  I  UPFIX  /FIX UP AC.
0403 0033  AND  U7  /JUST GET SIGNIFICANT BITS (0-7).
0404 7106  CLL  RTL  /NOW MOVE TO TIME PORTION (3-5)
0405 7006  RTL
0406 7006  RTL
0407 1234  TAD
0410 5216  JMP  U5010  /SET OTHER CORRECT BITS NOW.
           USETM
0411 4057  USEIR,  JMS  I  UGETND  /BOP PAST BAD POINTER.
0412 4431  JMS  I  UMEVAL  /THIS ROUTINE LOADS CLOCK WITH USERS
COMMAND REGISTER.
0413 4432  JMS  I  UPFIX  /MAKE SURE TO TURN INTERRUPTS ON.
0414 0035  AND  U7767
0415 1036  TAD  U10
           UTEMP
0416 3053  DCA  CMA  /SAVE ENABLE REGISTER FOR A SECOND.
0417 7240  CLA  CMA  /CLEAR CLOCK NOW.
0420 6130  JMS  I  UMEVAL  /SO WE CAN LOAD IN CORRECT STUFF.
0421 7240  JMS  I  UPFIX  /EVALUATE HIS TIME SETTING.
0422 4431  JMS  I  UPFIX
0423 4432  CIA
0424 7041  IOF  /MAKE SURE INTERRUPTS ARE OFF.
0425 6132  JMS  I  UTEMP
0426 6133  CLA
0427 7240  DCA  CMA  /CLEAR OUT THE TIM NOW.
0430 3004  DCA
0431 3005  DCA
0432 1053  TAD  TIM1
0433 6132  JMS  I  UTEMP  /RECALL DESIRED ENABLE REGISTER.
           ION  /SEND IT OUT.
0434 6001  CLA  /TURN ON INTERRUPTS NOW.
0435 7220  JMP  I  UDEVCON  /AND EXIT NOW.
0436 5456
0437 7240  UWAIT,  CLA  CMA  /WAITS FOR AN INTERRUPT. SET TO LOOK
LIKE CLOCK DID IT.
0440 1005  UWAITC,  TAD  TIM2  /GET LOW ORDER WORD.
0441 3053  DCA  UTEMP  /SAVE FOR AWHILE.
0442 4455  JMS  I  UJMS
0443 6713  B10LE  /PUT TO SLEEP.
0444 1053  TAD  UTEMP  /WAS IT CLOCK (OR OTHER IF CLOCK FUD
GE02)
0445 7041  CIA
0446 1005  TAD  TIM2  /COMPARE AGAINST PRESENT CLOCK.

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0400 4457  USETR,      JMS I,      UGETND      /BOP PAST CHAR:
0401 4431  EN TIME,      JMS I,      UMEVAL      /THIS ROUTINE SETS UP CLOCK TO A GIV
0402 4432  0402 4432  JMS I,      UPFIX      /FIX UP AC.
0403 0433  AND,      U7          /JUST GET SIGNIFICANT BITS (0-7).
0404 7106  CLL RTL      /NOW MOVE TO TIME PORTION (3-5)
0405 7006  RTL
0406 7006  RTL
0407 1034  TAD
0408 5216  JMP
0409 5216  USETM      /SET OTHER CORRECT BITS NOW.
0410 5216  USETM
0411 4057  USETR,      JMS I,      UGETND      /BOP PAST BAD POINTER.
0412 4431  EN TIME,      JMS I,      UMEVAL      /THIS ROUTINE LOADS CLOCK WITH USERS
0413 4432  0413 4432  JMS I,      UPFIX      /MAKE SURE TO TURN INTERRUPTS ON.
0414 0435  AND,      U7767      /SAVE-ENABLE REGISTER FOR A SECOND.
0415 1036  TAD,      U10        /CLEAR CLOCK NOW.
0416 3053  USETR,      JMS I,      UTEMP      /SO WE CAN LOAD IN CORRECT STUFF.
0417 7240  0417 7240  DCA CMA      /EVALUATE HIS TIME SETTING.
0418 6130  CLA CMA      /MAKE SURE INTERRUPTS ARE OFF.
0419 6130  CLA CMA
0420 6130  CLA CMA
0421 7240  JMS I,      UMEVAL      /CLEAR OUT THE TIM NOW.
0422 4431  JMS I,      UPFIX      /RECALL DESIRED ENABLE REGISTER.
0423 4432  CIA
0424 7041  IOF
0425 6132  IOF
0426 6133  CLA
0427 7207  CLA
0428 7207  CLA
0429 3024  DCA
0430 3024  DCA
0431 3006  TAD
0432 1053  TAD
0433 6132  6132
0434 6041  ION
0435 7207  CLA
0436 5456  JMP I,      UDEVCON      /AND EXIT NOW.
0437 7240  UWAIT,      CLA CMA      /WAITS FOR AN INTERRUPT. SET TO LOOK
0438 7240  LIKE CLOCK DID IT.
0439 1025  UWAITC,      TAD
0440 3053  DCA
0441 4455  JMS I,      UTEMP      /GET LOW ORDER WORD.
0442 6713  BIDLE      /SAVE FOR AWHILE.
0443 1053  TAD
0444 1053  TAD
0445 7041  CIA
0446 1053  TAD
0447 1053  TAD
0448 7041  CIA
0449 1053  TAD
0450 1053  TAD
0451 7041  CIA
0452 1053  TAD
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0447 7650 SNA CLA
0448 5242 JMP
0449 4454 RANDAE, JMS I
0450 7175 DEVCOM

/NOT CORRECT. WAIT SOME MORE.

0453 1376 UACPT, TAD ARDGET
0454 7740 SZA SNA CLA
0455 7201 CLA IAC
0456 3007 DCA ADACPT
0457 5251 JMP RANDAE

/IS BUFFER ASSIGNED?

/YEP. WE CAN ACCEPT NOW.

/OR REJECT.

/AND THEN EXIT.

/REAL TIME DECODING FUNCTION.

0460 1207 UREAL, TAD ADACPT
0461 7650 SNA CLA
0462 5255 JMP
0463 4454 JMS I UJMP
0464 2457 SKIPIT
0465 4455 JMS I UJMS
0466 7452 GETARY
0467 4437 JMS I
0468 3023 DCA APUT1
0469 1023 TAD APUT1
0470 3024 DCA APUT2
0471 4440 JMS I UAC2
0472 7041 CIA
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1215 1027 TAD CIA
1216 1023 TAD
1217 3024 DCA
1218 4440 JMS I UAC2
1219 7041 CIA
1220 3025 DCA
1221 4440 JMS I
1222 4440 IAC
1223 3027 DCA
1224 1027 TAD CIA
1225 1023 TAD
1226 3024 DCA
1227 4440 JMS I UAC2
1228 7041 CIA
1229 3025 DCA
1230 4440 JMS I
1231 4440 IAC
1232 3027 DCA
1233 1027 TAD CIA
1234 1023 TAD
1235 3024 DCA
1236 4440 JMS I UAC2
1237 7041 CIA
1238 3025 DCA
1239 4440 JMS I
1240 4440 IAC
1241 3027 DCA
1242 1027 TAD CIA
1243 1023 TAD
1244 3024 DCA
1245 4440 JMS I UAC2
1246 7041 CIA
1247 3025 DCA
1248 4440 JMS I
1249 4440 IAC
1250 3027 DCA
1251 1027 TAD CIA
1252 1023 TAD
1253 3024 DCA
1254 4440 JMS I UAC2
1255 7041 CIA
1256 3025 DCA
1257 4440 JMS I
1258 4440 IAC
1259 3027 DCA
1260 1027 TAD CIA
1261 1023 TAD
1262 3024 DCA
1263 4440 JMS I UAC2
1264 7041 CIA
1265 3025 DCA
1266 4440 JMS I
1267 4440 IAC
1268 3027 DCA
1269 1027 TAD CIA
1270 1023 TAD
1271 3024 DCA
1272 4440 JMS I UAC2
1273 7041 CIA
1274 3025 DCA
1275 4440 JMS I
1276 4440 IAC
1277 3027 DCA
1278 1027 TAD CIA
1279 1023 TAD
1280 3024 DCA
1281 4440 JMS I UAC2
1282 7041 CIA
1283 3025 DCA
1284 4440 JMS I
1285 4440 IAC
1286 3027 DCA
1287 1027 TAD CIA
1288 1023 TAD
1289 3024 DCA
1290 4440 JMS I UAC2
1291 7041 CIA
1292 3025 DCA
1293 4440 JMS I
1294 4440 IAC
1295 3027 DCA
1296 1027 TAD CIA
1297 1023 TAD
1298 3024 DCA
1299 4440 JMS I UAC2
1300 7041 CIA
1301 3025 DCA
1302 4440 JMS I
1303 4440 IAC
1304 3027 DCA
1305 1027 TAD CIA
1306 1023 TAD
1307 3024 DCA
1308 4440 JMS I UAC2
1309 7041 CIA
1310 3025 DCA
1311 4440 JMS I
1312 4440 IAC
1313 3027 DCA
1314 1027 TAD CIA
1315 1023 TAD
1316 3024 DCA
1317 4440 JMS I UAC2
1318 7041 CIA
1319 3025 DCA
1320 4440 JMS I
1321 4440 IAC
1322 3027 DCA
1323 1027 TAD CIA
1324 1023 TAD
1325 3024 DCA
1326 4440 JMS I UAC2
1327 7041 CIA
1328 3025 DCA
1329 4440 JMS I
1330 4440 IAC
13

/EASIC.LEE

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/SET UP LOW ORDER WORD OF COUNTER.
/AND PRESERVE CARRY.

0524	3014	DCA	CT3
0525	7014	RAL	
0526	4440	JMS	I UAC2
0527	7161	CLL	CML CIA
0530	3016	DCA	CT2
0531	7124	RAL	
0532	4437	JMS	I UAC1
0533	7161	CLL	CML CIA
0534	3016	DCA	CT1
0535	3022	DCA	ACCOUNT
0536	7201	CLA	IAC
0537	3026	DCA	ABDGET
0540	5456	JMP	I UDEVCON

/CLEAR PRESENT BUFFER COUNTER.

/SET UP BUFFER.

/RETURNS CLOCK TICK.

0541	0000	UTIM,	
0542	1374	TAD	TIM1
0543	3346	DCA	.+3
0544	1325	TAD	TIM2
0545	4430	JMS	I UOSETF
0546	0000		
0547	5741	JMP	I UTIM

USETF,

0550	0000	DCA	UTEMP
0551	3053	JMS	I UJMS
0552	4450	BEGFIX	
0553	3752	TAD	I USETF
0554	1750	CDF	
0555	6201	DCA	I PPAC2
0556	3443	TAD	UTEMP
0557	1053	DCA	I PPAC3
0560	3444	CDF	10
0561	6211	JMS	I UJMS
0562	4450	ANORM	
0563	4630	ISZ	USETF
0564	2350	JMP	I USETF
0565	5750		

/SAVE LOW ORDER WORD OF FAC.

/PREPARE TO INTERGIZE IT.

/GET MIDDLE WORD.

/PLACE IN FAC.

/GET LOW WORD.

/PLACE IN FAC.

/BYPASS VALUE

/RETURN NOW.

PAGE

0600	UADCB, 0	SPACLA	UADCN	/THIS RETURNS A VALUE FROM THE A-D.
0601	JMP			/BUFFERED OR DIRECT?
0602	TAD			/DIRECT.
0603			ABDGET	/CHECK TO SEE WHETHER BUFFER ASSIGNE
0604	SNA			/NO BUFFER ASSIGNED.
0605	JMP		UABAD	/IS BUFFER ACTIVE?
0606	SPA	CLA		/NO. GET COUNT.
0607	JMP		UADCMY	/ACTIVE. ARE WE ACCEPTING DATA?
0608	TAD		ADACPT	
0609	SNA	CLA		/NO. CHECK COUNT IN BUFFER.
0610	JMP		UADCMY	
0611	JMS	I	UPAGET	/GET VALUE FROM A-D BUFFER.
0612	JMP		UINAC	/AND FIX IT UP.
0613	UADCMY, TAD	ACOUNT		/GET BUFFER COUNTER NOW.
0614	JMP		UADCMY	/=0?
0615	JMS	I	UJMP	/NOPE. WE CAN RETURN SOME DATA.
0616	JMS	I	UJMP	/NO A-D DATA IN BUFFER. HE'S F--KED.
0617	UUNOAD			
0618	UADCMY, TAD	ACOUNT		
0619	JMP		UADCMY	
0620	JMS	I	UJMP	
0621	UUNOAD			
0622	UADCMY, JMS	I	UPPIX	/NON-REAL TIME.
0623	AND		U17	/JUST GET CHANNEL NUMBER.
0624	IOF			/WE CANNOT BE INTERRUPTED HERE.
0625	6531			
0626	6536			
0627	JMS	I	UADRAD	/PERFORM THE CONVERSION NOW.
0628	ION			/RESTORE INTERRUPTS.
0629	JMS	I		/SAVE FOR A SECOND.
0630	ION			/PLACE ABSOLUTE VALUE IN FAC.
0631	JMS	I		
0632	JMS	I		
0633	JMS	I		
0634	JMS	I		
0635	JMS	I		
0636	JMS	I		
0637	JMS	I		
0638	JMS	I		
0639	JMS	I		
0640	JMS	I		
0641	JMS	I		
0642	JMS	I		
0643	JMS	I		
0644	JMS	I		
0645	JMS	I		
0646	JMS	I		
0647	JMS	I		
0648	JMS	I		
0649	JMS	I		
0650	JMS	I		
0651	JMS	I		
0652	JMS	I		
0653	JMS	I		
0654	JMS	I		
0655	JMS	I		
0656	JMS	I		
0657	JMS	I		
0658	JMS	I		
0659	JMS	I		
0660	JMS	I		
0661	JMS	I		
0662	JMS	I		
0663	JMS	I		
0664	JMS	I		
0665	JMS	I		
0666	JMS	I		
0667	JMS	I		
0668	JMS	I		
0669	JMS	I		
0670	JMS	I		
0671	JMS	I		
0672	JMS	I		
0673	JMS	I		
0674	JMS	I		
0675	JMS	I		
0676	JMS	I		
0677	JMS	I		
0678	JMS	I		
0679	JMS	I		
0680	JMS	I		
0681	JMS	I		
0682	JMS	I		
0683	JMS	I		
0684	JMS	I		
0685	JMS	I		
0686	JMS	I		
0687	JMS	I		
0688	JMS	I		
0689	JMS	I		
0690	JMS	I		
0691	JMS	I		
0692	JMS	I		
0693	JMS	I		
0694	JMS	I		
0695	JMS	I		
0696	JMS	I		
0697	JMS	I		
0698	JMS	I		
0699	JMS	I		
0700	JMS	I		

/NON-REAL TIME.
 /JUST GET CHANNEL NUMBER.
 /WE CANNOT BE INTERRUPTED HERE.
 /PERFORM THE CONVERSION NOW.
 /RESTORE INTERRUPTS.
 /SAVE FOR A SECOND.
 /PLACE ABSOLUTE VALUE IN FAC.
 /NOW SET, SIGN OF FAC.
 /SET TO PICK UP FIELD 0. NO COOLNESS
 /IF POSITIVE LEAVE ALONE.
 /SET LEFT MOST BIT ON TO INDICATE NE
 /GET EXPONENT NOW.
 /BRING INTO CORRECT RANGE NOW.
 /IF TOO FAR,
 /DON'T CORRECT.

hier: A-D value placed in FAC, normalised & brought
 into the correct numeric range.

ACCOR = -11 = 7767

0650 7200 CLA
0651 6211 CDF
0652 5600 JMP I UACB 10
/RESET CDF.
/RETURN TO FIELD ONE (COOL, UGH1)

0653 0301 UPAGET, AGET

0654 0000 UUAC1, 0
0655 6201 CDF 0
0656 1442 TAD I PPAC1
0657 6211 CDF 10
0658 5654 JMP I UUAC1

0659 0000 UUAC2, 0
0660 6201 CDF 0
0661 1443 TAD I PPAC2
0662 6211 CDF 10
0663 5661 JMP I UUAC2

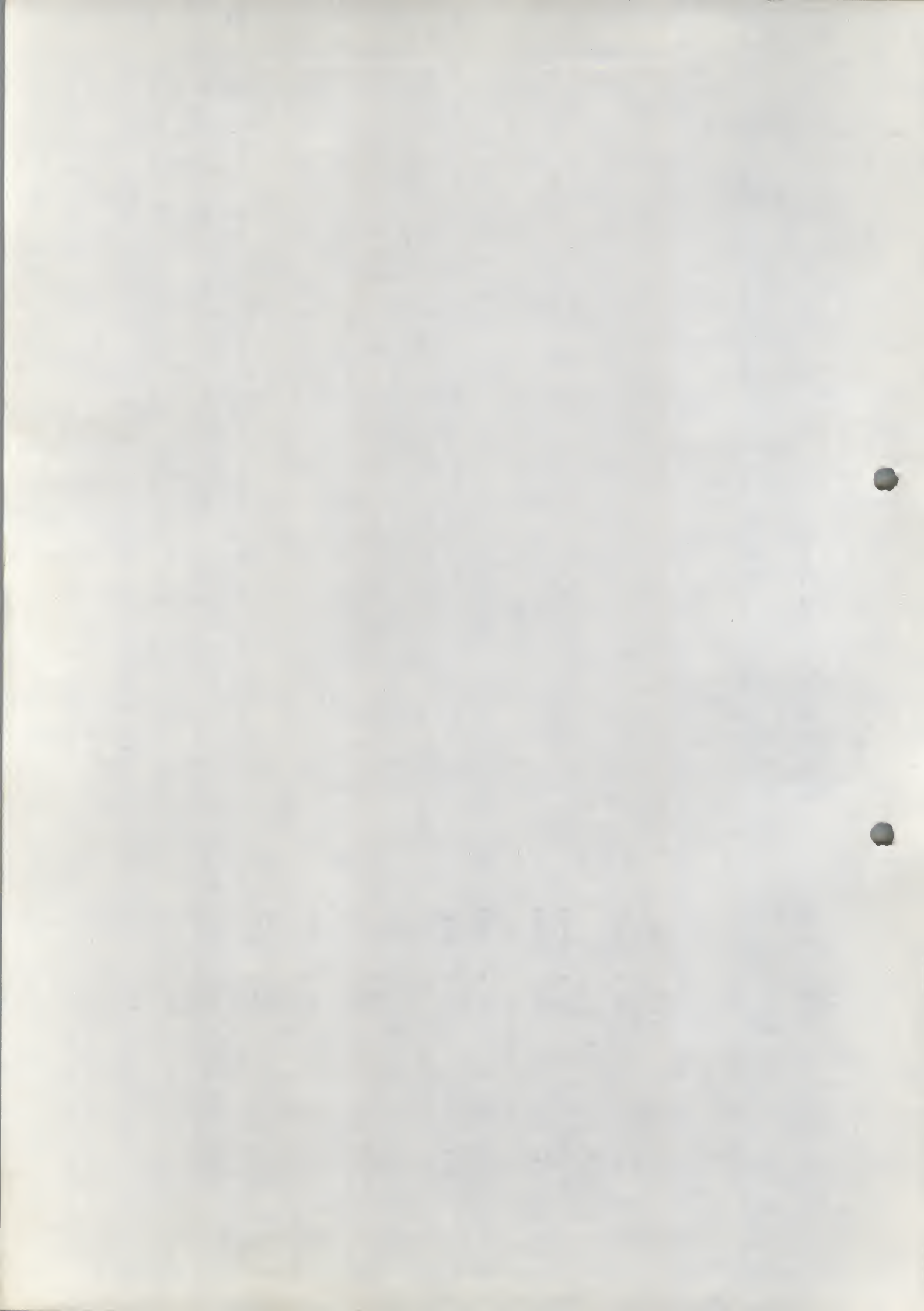
0664 0000 UUAC3, 0
0665 6201 CDF 0
0666 1444 TAD I PPAC3
0667 6211 CDF 10
0668 5666 JMP I UUAC3

0673 0000 UUMEVAL, 0
0674 4455 JMS I UJMS
0675 7616 MEVAL
0676 5673 JMP I UUMEVAL

0677 0000 UUPFIX, 0
0678 4455 JMS I UJMS
0679 4744 FIX
0680 7200 CLA
0681 4441 JMS I UAC3
0682 5677 JMP I UUPFIX

0705 4454 UUDEVIC, JMS I UJMP
0706 7176 DEVCON

0707 0000 UUJMS, 0



/BASIC.LRE

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0710	6222	CIF	0	UUJMS
0711	1737	TAD I		.+2
0712	3314	DCA		UUJMS
0713	4721	JMS I		
0714	2339	0		
0715	7410	SKP		
0716	2337	ISZ		UUJMS
0717	2337	ISZ		UUJMS
0720	5727	JMP I		UUJMS

/IN CASE OF SKIPPING RETURN

0721 7547 UUJMS, LLLJMS

0722	0000	UUJMP, 0		
0723	6202	CIF	0	UUJMP
0724	1722	TAD I		.+2
0725	3327	DCA		UUJMP
0726	4730	JMS I		
0727	0000	0		

0730 7662 UUJMP, LLLJMP

0731	1335	UPCONDO, TAD		UUFUDGE
0732	1336	TAD		UPJMP
0733	3334	DCA		.+1
0734	7402	HLT		
0735	1748	UUFUDGE, -6040		
0736	6737	UPJMP, JMP I		.+1
0737	0450	UREAL		
0740	0400	USETR		
0741	2411	USETC		
0742	0440	UWAITC		
0743	0437	UWAIT		
0744	0436	0000		
0745	0453	UACCPY		

/NOT USED NOW.

0746 0456

UREJT

0747	0450	UPFUN,	0	TAD	UFFUD
0750	1350			TAD	UFJMP
0751	1357			DCA	.+1
0752	3353			HLT	
0753	7432			CIF	0
0754	6212			JMP I	UPFUN
0755	5747				
0756	7757	UFFUD,	-21	JMS I	.+1
0757	4760	UFJMP,		ZZADC	
0758	0770			0000	
0761	0300			UTIM	
0762	0541			0000	
0763	0330			0000	
0764	0330			UCLS	
0765	0340			UCLC	
0766	2345			ZZADR	
0767	0775				

0770	0400	ZZADC,	0	CLA CMA	
0771	7240			JMS I	.+2
0772	4774			JMP I	ZZADC
0773	5770			UADCB	
0774	0500				

0775	2010	ZZADB,	0	JMS I	ZZADR-1
0776	4774			JMP I	ZZADB
0777	5775				

PAGE

IFZERO MACHINE<

LIMIT=TEN+3
>

IFNZRO MACHINE<

1400 0000 LIMIT, 0

>

*7022

7022 0000 PERMSYM,0
7023 4200 XXPLUS, 4200;TEXT 1+

7024	5300	
7025	4201	XXMINUS,4201:TEXT ' - '
7026	5500	
7027	4302	XXSTAR, 4302:TEXT ' * '
7030	5200	
7031	4303	XXSLASH,4303:TEXT ' / '
7032	5700	
7033	4404	XXUPARR,4404:TEXT ' ^ '
7034	3600	
7035	4110	XXLE, 4110:TEXT ' <= '
7036	7475	
7037	0000	
7040	4111	XXGE, 4111:TEXT ' >= '
7041	7675	
7042	0000	
7043	4112	XXNE, 4112:TEXT ' <> '
7044	7476	
7045	0000	
7046	4111	XXEG, 4111:TEXT ' >= '
7047	7576	
7050	0000	
7051	4112	XXEL, 4113:TEXT ' <= '
7052	7574	
7053	0000	
7054	4105	XXEQ, 4105:TEXT ' = '
7055	7500	
7056	4106	XXLT, 4106:TEXT ' < '
7057	7400	
7058	4107	XXGT, 4107:TEXT ' > '
7061	7500	
7062	4015	XXCOMMA,4015:TEXT ' , '
7063	5400	
7064	4016	XXSEMI, 4016:TEXT ' ; '
7065	7300	
7066	4017	XXCLOSE,4017:TEXT ') '
7067	5100	
7070	4017	XXRBRK,4017:TEXT '] '
7071	3500	
7072	4021	XXTO, 4021:TEXT ' TO '
7073	4024	
7074	1740	
7075	0000	
7076	4022	XXSTEP, 4022:TEXT ' STEP '
7077	4023	
7100	2400	
7101	2400	
7102	0000	
7103	4023	XXOPEN, 4023:TEXT ' ('
7104	5000	
7105	4023	XXLBRK,4023:TEXT ' ['
7106	3000	
7107	4024	XXFN, 4024:TEXT ' FN '
7110	0016	
7111	0000	
7112	4025	XXCOS, 4025:TEXT ' COS '

/EASIC.L8E

7113 0317			
7114 2300			
7115 4026	XTAN,	4026;TEXT 'TAN'	
7116 2401			
7117 1602			
7120 4027	XXATN,	4027;TEXT 'ATN'	
7121 0124			
7122 1542			
7123 4030	XXLOG,	4030;TEXT 'LOG'	
7124 1417			
7125 0700			
7126 4031	XXEXP,	4031;TEXT 'EXP'	
7127 0532			
7130 2020			
7131 4032	XXSGP,	4032;TEXT 'SGP'	
7132 2321			
7133 2200			
7134 4033	XXABS,	4033;TEXT 'ABS'	
7135 0102			
7136 2300			
7137 4034	XXSGN,	4034;TEXT 'SGN'	
7142 2307			
7141 1522			
7142 4035	XXINT,	4035;TEXT 'INT'	
7143 1116			
7144 2422			
7145 4036	XXRND,	4036;TEXT 'RND'	
7146 2216			
7147 3402			
7152 4037	XXSIN,	4037;TEXT 'SIN'	
7151 2311			
7152 1632			
7153 4040	XXPUT,	4040;TEXT 'PUT'	
7154 2025			
7155 2430			
7156 4041	XXLIST,	4041;TEXT 'LIST'	
7157 1411			
7161 2324			
7161 2007			
7162 4041	XXLIS,	4041;TEXT 'LIS'	
7163 1411			
7164 2302			
7165 4042	XXRUN,	4042;TEXT 'RUN'	
7166 2226			
7167 1522			
7170 4043	XXSCR,	4043;TEXT 'SCR'	
7171 2303			
7172 2207			
7173 4044	XXGET,	4044;TEXT 'GET'	
7174 0715			
7175 2400			
7176 4045	XXADC,	4045;TEXT 'ADC'	
7177 2104			
7222 0300			
7271 4046	XXTTY,	4046;TEXT 'TST'	


```
7202 2423
7203 2440
7204 4047 TEXT 'TIM'
7205 2411
7206 1500
7207 4050 TEXT 'TAB'
7208 2411
7209 2240
7210 4051 TEXT 'UUF'
7211 2525
7212 0500
7213 4052 TEXT 'CLS'
7214 2314
7215 2330
7216 4053 TEXT 'CLC'
7217 0314
7218 0330
7219 4054 TEXT 'ADB'
7220 2104
7221 0210
7222 6000 TEXT 'O'
7223 3700
7224 6000 TEXT 'O'
7225 3400
7226 6001 TEXT 'END'
7227 0515
7228 0400
7229 6002 TEXT 'FOR'
7230 0017
7231 2240
7232 0000
7233 6003 TEXT 'GOSUB'
7234 0717
7235 2325
7236 0240
7237 0000
7238 6004 TEXT 'GO TO'
7239 0717
7240 4024
7241 1740
7242 0000
7243 6004 TEXT 'THEN'
7244 4024
7245 1005
7246 1640
7247 0110
7248 6005 TEXT 'IF'
7249 1100
7250 4000
7251 6006 TEXT 'INPUT'
7252 1116
7253 2025
7254 2440
7255 0000
7256 6007 TEXT 'LET'
```


7271	1435	
7272	2440	
7273	2332	
7274	6010;TEXT 'NEXT '	XXNEXT, 6010;TEXT 'NEXT '
7275	1625	
7276	3024	
7277	4000	
7300	6011	
7301	2022	
7302	1116	
7303	2440	
7304	0020	
7305	6012	
7306	2235	
7307	2425	
7310	2216	
7311	0002	
7312	6013	
7313	2324	
7314	1720	
7315	0002	
7316	6014	
7317	0411	
7320	1540	
7321	0000	
7322	6015	
7323	2205	
7324	2324	
7325	1722	
7326	0500	
7327	6016	
7330	2205	
7331	1540	
7332	0000	
7333	6017	
7334	0405	
7335	0640	
7336	0000	
7337	6020	
7340	2205	
7341	0104	
7342	4000	
7343	6021	
7344	2401	
7345	2411	
7346	4000	
7347	6024	
7350	2424	
7351	3140	
7352	1116	
7353	0000	
7354	6025	
7355	2424	
7356	3140	

XXRETRN, 6012;TEXT 'RETURN'

XXSTOP, 6013;TEXT 'STOP'

XXDIM, 6014;TEXT 'DIM '

XXRSTOR, 6015;TEXT 'RESTORE'

XXREM, 6016;TEXT 'REM '

XXDEF, 6017;TEXT 'DEF '

XXREAD, 6020;TEXT 'READ '

XXDATA, 6021;TEXT 'DATA '

XXTTYI, 6024;TEXT 'TTY IN'

XXTTYO, 6025;TEXT 'TTY OUT'

PALB

/BASIC.LAB

```
7357 1725
7360 2430
7361 6026;TEXT 'LPT'
7362 1420
7363 2430
7364 6027;TEXT 'PTP'
7365 2224
7366 2030
7367 6030;TEXT 'PTR'
7370 2024
7371 2230

7372 6032;TEXT 'RUBOUTS'
7373 2225
7374 0217
7375 2524
7376 2330
7377 6033;TEXT 'NO RUBOUTS'
7400 1517
7401 4122
7402 2542
7403 1725
7404 2423
7405 0100
7406 6034;TEXT 'CLEAR'
7407 0314
7410 0501
7411 2200
7412 6035;TEXT 'DELAY'
7413 0405
7414 1401
7415 3100
7416 6036;TEXT 'USE'
7417 2523
7420 0540
7421 0100
7422 6037;TEXT 'PLOT'
7423 2014
7424 1724
7425 4000
7426 6040;TEXT 'REAL TIME'
7427 2205
7430 0114
7431 4124
7432 1115
7433 0540
7434 0000
7435 6041;TEXT 'SET RATE'
7436 2305
7437 2430
7440 2211
7441 2435
7442 4000
7443 6042;TEXT 'SET CLOCK'
7444 2305
```

/6031 HAS BEEN REMOVED.

/BASIC.LRE

7445 2442
7446 0314
7447 1723
7448 1340
7451 0200
7452 6043
7453 2721
7454 1124
7455 0300
7456 6344
7457 2711
7460 1124
7461 0000
7462 6045
7463 2503
7464 1715
7465 4300
7466 6044
7467 2123
7470 0305
7471 2024
7472 0000
7473 6047
7474 2205
7475 1206
7476 0324
7477 0000

XXWAITC,6043;TEXT 'WAITC'

YYWAIT, 6044;TEXT 'WAIT'

XXUCOM, 6045;TEXT 'UCOM' 2

XXACPT, 6046;TEXT 'ACCEPT'

XXREJT, 6047;TEXT 'REJECT'

0

7500 0000

XXTEXT, 3200
XXEOF, 6023
XXUNARY,4113
XXFINI, 4014
XXEXIT, 6022
XXLITJ, 2000;2001;2002;2003

7501 3000
7502 6023
7503 4113
7504 4114
7505 6022
7506 2110
7507 2001
7510 2002
7511 2003

NOPUNCH
LINBUF, ZBLOCK 51
LBEGIN, ZBLOCK 60
ENGLISH, 0
POLIST, ZBLOCK 40
ENPPOLI, 0
FORLIST, ZBLOCK 20
GOLIST, ZBLOCK 30
GSBEND, 0
ENPUNCH

5

7512 2000
7553 0000
7603 0000
7604 0000
7704 0000
7705 0000
7725 0000
7755 0000

ABOGEF 1756	ABOGET 0006	ABOP 0325	ABS 6425	ACCEPT 7743
ACE 0025	ACN 4417	ACCOUNT 0022	ACS 0024	AC1 0020
AC2 0016	AC3 2016	ADACPT 0007	ADA1 0025	ADA2 0026
AD03 0027	ADH 7747	ADC 7747	ADCCOR 0064	ADCL 6530
ADCVT 0010	ADCH 0012	ADDES 0067	ADLE 6535	ADLM 6531
ADBE 6533	ADRS 6537	ADSE 6535	ADSK 6534	ADST 6532
AGE1 0301	ALGNLP 4466	ALLOC 1461	ALL3 3146	ALTMOD 2663
ALI 4654	AMATCH 6506	ANORM 4600	APUT 0263	APUT1 0023
APUT2 4124	ARGERR 7363	ARRLOC 0003	ARI 4402	ATEMP 0323
ATN01 6237	ATLINE 6451	ATN 6200	ATNRIG 6265	ATNLOW 6220
REGFIA 3762	AUTEMP 0063	BARRON 2666	BCDEFG 1757	BCKWDS 4502
BUSY 6737	BIDLE 6713	BKWD 0600	BREAK 6522	BSKIP 2730
CDIAP 7646	CARRET 2700	CCINTK 7735	CCXRA 7342	CDEVCO 7607
CLC 7747	CHECKX 2346	CHKFIT 6400	CLAH 6133	CLBA 6136
CLKSTS 0003	CLCA 6137	CLOCKI 0175	CLEARV 2462	CLEN 6134
CLSA 6135	CLSK 6131	CLTEMP 0011	CLCNT 0350	CLS 7747
CNTLCF 6700	CLTCL 6131	CNTLO 0133	CLZE 6130	CNCLR 0143
COMP01 3400	COMPAR 2136	CONST 1367	COS 5516	COLUMN 0126
COMTFP 7343	COMTLP 7331	COWTO 7344	COWTW 7344	CRINTX 3076
CHLF 6531	CPLFPR 3740	CT1 0016	CT2 0015	CT3 0014
CVTLOU 5324	DATADR 1667	DBAD 7513	DBSAD 7532	D8GOT 7420
DRISRT 7547	DEBIT 7526	DBUT 7556	DBLAST 7512	DECEXP 0043
DECFRA 3365	DEPER 0526	DEF 1576	DELAY 7564	DELETE 6501
DELCUT 9142	DEVCOM 7175	DILC 6050	DICD 6451	DIGIN 3224
DIGIT 3284	DIGLUP 6557	DILC 6050	DILE 6356	DILX 6053
DILY 6354	DIM 6472	DIMFLA 0034	DINP 7511	DIRE 6057
DISAUT 0015	DISB 0036	DISD 6052	DIVLP 4705	DIVXTE 3364
DIY 6755	DLAST 7511	DOAD 0362	DOADLP 0365	DOITNO 1247
DOTZER 7371	DPLAG 3365	DQINTX 3170	DSCREW 0375	DVLOOP 5245
ELIT 2415	END 2567	ENDLIN 7643	ENDNUM 3331	ENDPOL 7704
ECFAD 4528	EPR 0056	ERROR 4142	EVAL 1004	EVALGO 1007
EXECUT 0213	EXIT 2402	EXP 6000	EXP000 5242	EXPLOX 5764
EXP0K 5205	FAD 4000	FADEXT 1314	FADI 4400	FATNAX 6273
FATNC 6337	FATNCH 6342	FATNCJ 6345	FATNC1 6304	FATNC2 6273
FATNC3 6312	FATNC4 6315	FATNCS 6320	FATNC6 6323	FATNC7 6326
FATNCH 6331	FATNC9 6334	FATNSX 6272	FATNT 6276	FATNTT 6301
FCNTLO 6600	FCNTLO 6703	FDIGIT 3300	FDV 7400	FDVI 7400
FEXIT 4435	FEXIT 0000	FEXPC1 6072	FEXPC2 6075	FEXPC3 6100
FEXPC4 6103	FEXPC5 6106	FEXPC6 6111	FEXPF 6467	FEXPI 6061
FEXFU 6064	FINDIT 0557	FINDLU 0555	FIX 4744	FIXEX1 4773
FIXITU 5200	FIXLIN 2113	FIXLUP 4750	FIXUP 5146	FJMP 1000
FJMP1 1400	FJUMP 1130	FLO 3000	FLDI 3400	FLOGC1 6172
FLOGC2 6153	FLOGC3 6156	FLOGC4 6161	FMP 6100	FMPI 6400
FNTENF 5123	FMT1 5125	FMT2 5053	FMT3 5130	FN 5453
FNEAR 0352	FNEIT 1200	FOR 0413	FORGT 0463	FORDON 0663
FCRERY 3501	FORLIM 0721	FORLIS 7705	FORSTE 0724	FORVAR 0452
FOUND 0575	FOURLF 3557	FPADD 4456	FPAADR 4304	FPDIV 4657
FPDCIT 4237	FPFLAG 0156	FPGOTO 4273	FPJMP 4317	FPJUMP 4274
FPLAC 4351	FPL00P 4202	FPML 4530	FPNOAD 4270	FPOPER 4305
FRPGZ 4227	FPSKIP 4314	FPSTO 4322	FPSUB 4453	FPT 4200
FRTMP 4576	FPT 0057	FPZDIV 4736	FRNDX 5404	FRSTNE 2155
FSA 5400	FSRI 5400	FSEQ 0050	FSGE 0100	FSGT 0140
FSHIFT 7443	FSINC1 5713	FSINC3 5715	FSINC4 5721	FSINC5 5724

FSINC6 5727	FSINC7 5732	FSINC4 5735	FSINOK 5657	FSINZ 5705
FSINZ 5713	FSIN12 5641	FSLE 0150	FSLT 0110	FSNE 0040
FSRFX 5407	FST 2000	FSTI 2400	FTANT1 5577	FTANT2 5722
FUTAB 1131	FUPRC1 5762	FWD 0200	FXPFX 6023	GALT 7247
G012 1504	GET 0001	GETADD 1400	GETARY 7462	GETBLK 1674
GETCH 7201	GETJ 1770	GETLIN 2603	GETLRE 2600	GETOPR 1015
GETVAR 0311	GETND 0177	GLOOP 2711	GOBOTH 0532	GOLIST 7725
GETSUB 0505	GOTEMP 0053	GOTO 0517	GOTOPR 1202	GOTSS 1074
GETSTE 0634	GOUT 7251	GPTR 0060	GRB 7224	GRDELA 7222
GSEEND 7755	GSPTR 0165	GSS1 1562	GSS2 1563	GRBKLP 1710
GTEP 7254	GWHERE 7270	HFOUND 7321	HIGHWD 4333	HLOOP 2722
HPTF 0061	HRCHAR 7256	HRLOP 7302	HRMES 7323	IAMLES 2156
IDLEAC 0732	IDLECD 6725	IDLECI 6726	IDLEK 6731	IDLEPC 6733
IF 0375	IGNORE 2115	IIXR 7615	IMMED 2454	IN 3431
INCHAR 7255	INDEV 0127	INDEX1 0013	INDEX2 0014	INLCMT 4065
INLCOP 4072	INLUPF 0432	INODUN 6710	INOPPP 6641	INOTTT 6645
INLUP 4034	INPPT 4063	INPUT 4007	INSERT 2032	INSRTS 2030
INT 5434	INTAC 6734	INTCDF 6770	INTCIF 6771	INTECD 6762
INTAMP 6736	INTER 6602	INTEXT 6744	INTHT 6011	INTL 6735
INTCU 6705	INTPLC 6012	INWDM 4064	IPNOPE 4024	IPOINT 7034
ISDEF2 3512	ISDIG 6532	ISDIM 1473	ISSET 7610	ISIT 4566
ISITDF 0503	ISITFU 1110	ISITLI 4104	ISLIT 4133	ISSOME 1644
ISUMIN 1313	ITSDEF 3514	ITSDP 3256	ITSE 3263	ITSOP 1220
ITSP 3300	JRPENT 3707	JDIGIT 3124	JISDIG 3367	JMATCH 2766
JPUTCH 3777	JTXIT 3123	JUST0 3150	JUSTWF 3160	JUSTOP 3163
JUST1 3145	JUST2 3147	KEYWD 0231	LBEIN 7563	LCF 5662
LET 0312	LEIDO 0205	LETTER 3446	LFXLUP 2333	LHALF 3070
LIMIT 1300	LINBUF 7512	LINENO 0092	LINFIX 2330	LIST 3600
LISTAL 3015	LISTLU 3620	LISTR0 3617	LIS2 3640	LIS3 3655
LIS4 3601	LIS5 3676	LITRAL 3131	LLJMP 7660	LLJMS 7647
LLLUU 7140	LLS 6666	LNOEND 3630	LOADED 4127	LOCCTR 0045
LOCTEM 0571	LOG 6114	LPGT 7163	LOGACE 6165	LOGFWD 6164
LOGCKA 6167	LOCTMP 1673	LPTOUT 7163	LSF 6561	LSTLOC 2160
LUP 3425	LUPF 0426	L4LUP 3664	MACHIN 0001	MAYZER 4612
MENLI 0041	MENDPD 2363	MEVAL 7616	MEVALG 7632	MGOLIS 0720
MESPEY 3525	MINUS 1316	MLBEG1 0173	MEND 0174	MLINBU 0040
MESONE 3736	MOREDI 6470	MOREIN 4000	MORERD 1621	MOVE 2212
MOVLUP 2472	MPY 5321	MPYLUP 4552	MTXIT 3201	MULCLR 4571
MULEXP 3345	MULXTE 3363	MUSTBE 4570	NDELAY 7756	NEWCHA 2615
NEWLIN 2510	NEXT 0600	NEXTER 0673	NEXTVA 0637	NINTEC 7727
NCRUMP 4533	NOCOMM 2335	NOINT 0134	NONBLN 3110	NONZER 5016
NCPARE 1335	NOPCR 2216	NORLFT 6423	NORMED 5220	NORMIT 5207
NCRUB 5574	NOSSI 1460	NOSS2 1453	NOT 3427	NOTRAD 2127
NOTBIG 4620	NOTCR 3023	NOTERS 2061	NOTER 0435	NOTKWD 0313
NOTNOV 2000	NOTSGN 3301	NOTTGT 2236	NOTVAR 1105	NOTX10 5236
NPSPEY 7555	NSYMTA 0006	NULCMD 7724	NULJOB 7566	NULLOP 7700
NVEUF 5335	QADD 4435	OBHIGH 1177	OBLW 1165	OBOP 7101
OC 5205	OCMLIN 7115	OCOR 7113	OCOUNT 7042	ODEV 0132
OFLAG 7100	OFLOW 7115	OJUMP 1276	OLDOP 0065	ONE 3151
ONECIN 1164	ONES 1076	ONLY1 3322	OP0600 5452	OP0736 2326
OPDCAL 1203	OPE 0030	OPERAN 0073	OPNUL 7067	OPPOINT 7065
OP0143 7073	OPRST 7155	OPS 0026	OPUTC 7041	OP1 0023
OP2 0022	OP3 0021	OTEMP 1271	OTHER 3300	OTST1 7112
OUTCEL 7145	OUTDEV 0131	OUTD2 0130	OUTIT 7043	OUTNUM 5000
OV 0012	OUT00 3550	011 0504	0110 2361	012 0065

0122	2771	013	1567	0132	7265	0137	7261	014	2360
0146A	2775	0143	2772	0143	7266	017	5147	01742	3375
0175	7207	0177	0027	01774	3376	02	0062	0200	0155
02040A	3373	0202	5344	0212	0010	0215	0007	023	1366
0233	3772	0240	0051	0253	5150	0255	5151	0256A	5156
0256B	5575	0260	0011	027	3370	0305	5152	032	3121
036	2757	03737B	2773	03754	1162	03755	1273	0377	0071
04	0103	04A	2770	04001	7525	04014	1163	042	3126
04200	3105	04213	1164	05400	5347	06201A	6615	06201B	7005
06202	5775	07	0072	070	6774	0700	1272	07000A	2560
07000B	3474	07000C	7726	07077	1275	07520	5153	07545	4777
07570	6456	07577	4577	07577B	7554	07600	4345	07601	7260
07603	2774	07610	5345	07612	7262	07600A	0765	07640B	2763
07640C	7263	07673	3316	077	0070	07706A	6544	07706C	3473
07715	2775	07725A	3100	07725B	3371	07737	3122	07740	0054
07741	3745	07743	4743	07745	0162	07746	7264	07753	3104
07762	2327	07763A	0774	07763B	3101	07764A	1274	07764B	3102
07764C	3374	07764D	6777	07766	5154	07770	0055	07771	5155
07772	5157	07773	5346	07774	1566	07775	6776	07776	3372
07777	7114	PACN	4742	PAL1	0150	PANDRM	0146	PARGER	0047
P00R	0147	PASSCR	0472	PASSUM	7440	PBEGFI	1776	PBIDLE	7161
P00R	0367	PBUSY	7157	PCCUNT	0744	PCHKFI	0163	PCOMMO	3357
P00V	0141	PDEVCO	7442	PDL	0036	PDLIST	7544	PEDIT	0120
P00V	7222	PERROR	0077	PEVAL	0101	PEVALG	2243	PEXECU	0103
P00V	5776	PFINDI	0672	PFIX	0106	PFERR	5546	PFPL00	4575
P00V	0112	PGETBL	0115	PGETCH	0032	PGETLI	0124	PGETLR	3022
P00V	0111	PGETVA	0113	PGOLIS	0164	PGOTOP	0107	PHRCHA	6740
P00V	0471	PINCHA	6741	PINT	5676	PISITL	0175	PJSET	2461
P00V	0172	PLEIDO	0204	PLEITE	3103	PLIMIT	2561	PLINBU	0037
P00V	0161	PLIST	2563	PLITRA	3377	PLOG	5775	PLOT	7400
P00V	7514	PLUS	1312	PMEVAL	7441	PMPY	5150	PNBFG	5161
P00V	3757	PNOBGL	0122	PNOBMO	2566	PNMBU	0044	POADD	0157
P00V	6742	POP	3551	POPERA	3127	POP3	4334	POTHER	2776
P00V	6743	POUTNU	0117	PPACE	0045	PPACS	0346	PPAC1	0042
P00V	0443	PPAC3	0044	PPASSC	0110	PPDLIS	0125	PPERMS	2565
P00V	4741	PPFORL	1760	PPINT	6060	PPOP	0105	PPRINR	2241
P00V	0114	PPRIQU	0123	PPUSH	0104	PPUTCH	0133	PPXRA	7160
P00V	2315	PRESET	0137	PRINRL	2277	PRINCO	2303	PRINHA	2260
P00V	2225	PRINRE	2242	PRINSE	2312	PRINT	2173	PRINTC	2207
P00V	2226	PRINTH	2222	PRINTX	3702	PRINUM	3747	PRINVA	3653
P00V	3711	PRSUBR	3724	PRTEMP	0042	PRTXRE	3722	PSGN	5675
P00V	1617	PSLOOP	0116	PSPACE	1565	PSICK	0121	PSTOVA	0112
P00V	0103	PSYNTA	0005	PTARDE	5670	PTARFL	5671	PTABLE	2777
P00V	0145	PTEN	0076	PTPOUT	7164	PTIRN	7172	PTUBIG	3021
P00V	5545	PUSH	2364	PUTCDF	7037	PUTCH	0741	PUTCIN	7023
P00V	7000	PUTJ	1761	PUTLOC	2172	PULP	7307	PUTXRA	0776
P00V	0505	PXLINB	3746	PXXCRL	3125	PXXEOF	2564	PXXEXI	3126
P00V	3133	PXXTHE	2562	PZER00	6545	QBIDLE	7257	QERROR	4170
P00V	7155	RANDAE	0451	RBSWCH	0135	READ	1623	READLO	0246
P00V	6525	REALTI	7743	REJECT	7743	RELATE	1342	REMPAC	3043
P00V	7115	RESET1	7141	RESTOR	3773	REITER	0713	RETURN	0677
P00V	3374	RESET2	6413	RNO	5353	RNDJMP	5350	RTERR	7373
P00V	5573	RHALF	2452	RUN	2503	RUNJMP	2455	RUNNOT	2477
P00V	2543	RUN2LU	2514	RUN2NO	2537	SCHWR	1657	SCRATC	2440
P00V	1560	SETCLO	7743	SETRAT	7743	SETSGN	4512	SETUP	7600

SGN	4726	SIMPLY	3466	SIN	5624	SINCHA	7162	SJUMP	0240
SKIFIT	0467	SLASH	1332	SLOOP	2707	SLSHTM	1337	SNUMFL	0064
SPACER	3373	SPCEIN	0140	SPLEFT	0144	SQEXIT	5450	SQLOOP	5435
SLP	5412	SSERR	1570	SSFIX	4775	SSONE	0344	SSTWO	0345
STAF	1327	START	1000	STICKI	6430	STOP	2570	STOVAR	0341
SLRFA	2161	SKERN	6441	TAB	5547	TARDES	6367	TABDO	6350
TAPFLG	2345	TASOK	6360	TABTHR	2362	TAN	5504	TREGFI	5572
TEN	0000	THESKI	1353	THISTX	3107	TIM	7747	TIM1	0004
TIV2	0025	TMP	0031	TOOLON	5162	TPRINT	6370	TRALUP	2105
TRAPSF	2103	TRYAGI	5133	TRYSTE	0626	TST	7757	TRSTFX	7755
TSTP	7767	TYVIN	7173	TYVOUT	7165	TUBIG	2657	TWIDTH	2357
TROSS	1777	TXIPAK	3046	UADAD	0620	UACCP	0453	UAC1	0037
UAC2	0340	UAC3	0041	UADCB	0600	UADCIN	0913	UADCMY	0615
UADCN	0622	UCLC	0345	UCLLOOP	0217	UCLS	0340	UDEVCO	0056
UDAD	0051	UDOPER	1363	UFFUD	0756	UFJMP	0757	UGETWD	0057
UCH1	3562	UIEXT	0234	UIEXT2	0243	UIEXT3	0245	UIEXT4	0260
UINAC	2531	UJMP	0054	UJMS	0055	UMEVAL	0031	UNOPER	1321
UNDERF	4645	UPAGET	0653	UPARRO	6457	UPARRX	5743	UPARR2	4365
UFFCND	0731	UPFIX	0032	UPFUN	0747	UPJMP	0736	UREAL	0460
UFFJT	0456	USE	7446	USERFN	1620	USETC	0411	USETF	0550
USETM	0416	USETR	0400	USKIPI	7461	UTE4P	0453	UTIM	0541
ULAC1	0654	UUAC2	0661	UUAC3	0666	UUATA	7567	UUDEV	0705
UFLD	0735	UUJMP	0722	UUJMS	0707	UUMEVA	0673	UUNOAD	7730
UUPFIX	0577	UUSEIF	0030	UUUJMP	0730	UUUJMS	0721	UUULLL	0352
UVP	7522	UWAIT	0437	UWAITC	0440	U1P	7503	U10	0036
U100	0413	U17	0047	U177	0017	U2P	7504	U4707	0020
U5P10	0734	U7	0033	U7760	0052	U7767	0035	U7775	0021
U7777	0350	VAR	0343	VARTEM	0553	VSCHIN	3524	VSCHLU	3475
VSCFNO	3520	WAIT	7743	WAITC	7743	WDTEMP	1475	WORD	0050
XEXECU	4412	XGISIT	4066	XGMUST	7345	XISIT	4373	XMUST	7352
XRESTA	1403	XXABS	7134	XXACPT	7466	XXADB	7223	XXADC	7176
XXATN	7123	XXBSLS	7230	XXCLC	7220	XXCLEA	7406	XXCLOS	7066
XXCLS	7215	XXCONM	7062	XXCOS	7112	XXCRLF	7226	XXDATA	7343
XXDEF	7333	XXDELA	7412	XXDIM	7316	XXEG	7045	XXEL	7051
XXFLD	7232	XXEOF	7502	XXEQ	7054	XXEXIT	7505	XXEXP	7126
XXFINI	7504	XXFN	7107	XXFOR	7235	XXGE	7143	XXGET	7173
XXGCSU	7241	XXGOTO	7246	XXGT	7060	XXIF	7264	XXIMPU	7263
XXINT	7142	XXLBR	7105	XXLE	7035	XXLET	7270	XXLIS	7162
XXLIST	7156	XXLI10	7506	XXLOG	7123	XXLPT	7361	XXLT	7056
XXINJ	7425	XXVE	7043	XXNEXT	7274	XXNRUR	7377	XXOPEN	7103
XXPLOT	7422	XXPLUS	7023	XXPRIN	7300	XXPTP	7364	XXPTR	7367
XXPLT	7153	XXRBR	7070	XXREAD	7337	XXREAL	7426	XXREJT	7473
XXPEM	7327	XXRETR	7305	XXRND	7145	XXRSTO	7322	XXRUR	7372
XXRLN	7105	XXSCA	7170	XXSEMI	7064	XXSETC	7443	XXSETR	7435
XXSCN	7137	XXSIN	7150	XXSLAS	7031	XXSOR	7131	XXSTAR	7027
XXSTEP	7176	XXSTEP	7312	XXTAB	7207	XXTAN	7115	XXTEXT	7501
XXTHEM	7253	XXTHE	7204	XXTO	7072	XXTTY	7201	XXTYI	7347
XXTYY	7364	XXUCOM	7462	XXUNAR	7503	XXUPAR	7333	XXUSE	7416
XXULF	7212	XXWAIT	7452	XXWAIT	7456	ZERDON	5144	ZERO	0152
ZFIXEX	4767	ZZADB	0775	ZZADC	0770				

